

AN UPGRADED ART MARKET FOR A DIGITAL AGE

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Abstract: The traditional art market suffers from systemic market failures resulting in inefficiencies. There is no universal system or database to keep track of provenance information. The lack of provenance results in authentication issues, raising risk within the market. Additionally, the physical form of traditional art presents numerous problems including theft and transaction costs. Copyright and trademark laws attempt to address these market failures through regulation and enforcement mechanisms. However, these legal mechanisms are inefficient tools to regulate the art market because they rely on voluntary record keeping and retroactive enforcement through the judicial system. In contrast, blockchain technology, as an efficient regulatory and enforcement system, solves the art market problems that the law cannot fix. This innovative technology can solve the complex legal problems that the art market faces daily. Blockchains are immutable ledgers that store impeccable provenance information. Several blockchains have a native form of artwork—non-fungible tokens (NFTs)—that work seamlessly with the technology. NFTs take the physical aspect out of art, allowing art to exist digitally on the blockchain, where they cannot be damaged, stolen, or forged. Blockchain technology presents a novel solution to the physicality, authenticity, and provenance problems in the art market.

Keywords: NFTs, Blockchain Technology, Art Market Problems

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INTRODUCTION

In 1989, an art collector named Joe Simon-Whelan purchased an Andy Warhol silk-screen painting for \$195,000.¹ When Simon-Whelan tried to authenticate the piece in 2001 and 2003, the Andy Warhol Art Authentication Board rejected the painting on both occasions.² Simon-Whelan subsequently filed suit for \$20 million against the board for allegedly rejecting authentic works “to induce artificial scarcity in the market” for Andy Warhol artwork.³ After three years of litigation, Simon-Whelan dropped the lawsuit.⁴ The Andy Warhol Authentication Board disbanded a year later because of litigation costs—it spent over \$2 million in legal fees in 2010 alone.⁵ The board’s disbanding represents a larger authentication problem in the art market. Authenticators are “heading for the hills” due to high liability risks and litigation expenses.⁶ But, authentication is a necessary regulation to prevent fraud and forgery. The art market is begging for a solution to this systemic market failure.

Many problems arise in the traditional art world, which consists of two- and three-dimensional works of art in the physical world, such as paintings, photographs, and sculptures. It is difficult to establish the ownership and transfer history of an artwork—called provenance. No universal system or database exists to keep track of provenance information in the traditional art market. The lack of provenance results in authentication issues. Additionally, the physical form of traditional art presents numerous problems including theft and transaction costs. Problems in the art market are currently addressed through self-regulatory mechanisms, such as authentication experts. However, as the Andy Warhol Art Authentication Board’s disbandment illustrates, art authentication and proper provenance are complex problems facing the traditional art market.

Various areas of law unsuccessfully attempt to regulate the art market. As a result, the art market is largely unregulated by the legal system. Copyright and trademark laws are utilized by actors in the art market as regulation enforcement mechanisms. These legal mechanisms are inefficient tools to regulate the art market because they rely on voluntary record keeping and retroactive enforcement through the judicial system. Copyright and trademark law cannot hope to solve the authentication and provenance issues facing actors in the traditional art market.

Blockchain technology, as an efficient regulatory and enforcement tool, solves the art market problems that the law cannot fix. The innovative technology can solve the complex legal problems that the art market faces. Blockchains are immutable ledgers that store impeccable provenance information. Several blockchains have a native form of artwork—non-fungible tokens (NFTs)—that works seamlessly with the technology. NFTs take the physical aspect out of art, allowing art to exist digitally on the blockchain, where they cannot be damaged, stolen, or forged.

¹ Danielle Rahm, *Warhols, Pollocks, Fakes: Why Art Authenticators Are Running for the Hills*, FORBES (June 18, 2013), <https://www.forbes.com/sites/daniellerahm/2013/06/18/warhols-pollocks-fakes-why-art-authenticators-are-running-for-the-hills/?sh=75bc23447e0b>; Alan Feuer, *Warhol Foundation Accused of Dominating the Market*, N. Y. TIMES (July 17, 2007), https://www.nytimes.com/2007/07/17/arts/design/17warhol.html?pagewanted=print&_r=1&.

² Alan Feuer, *Warhol Foundation Accused of Dominating the Market*, N. Y. TIMES (July 17, 2007), https://www.nytimes.com/2007/07/17/arts/design/17warhol.html?pagewanted=print&_r=1&.

³ *Id.*

⁴ Rahm, *supra* note 1.

⁵ *Id.*

⁶ *Id.*

The art community has been wrestling with the problems intrinsic to the physical form of traditional artworks for decades. In 1958, Yves Klein’s “Void” exhibition at Galerie Iris Clert in Paris sparked the new realist and conceptualist movements in the art world. The Void, displayed to visitors in an empty room inside the gallery, consisted of 101 Zones of Immaterial Pictorial Sensibility that were immaterial, nonphysical artworks. Klein efficiently transferred immaterial artworks to art collectors by exchanging gold for a receipt which detailed the provenance of the piece. Klein’s successful exhibit and project was a very early rendition of a nonphysical non-fungible artwork—today’s digital NFT. Blockchain technology effectively solves many traditional art market issues including physicality problems, authenticity, and provenance. With the numerous problems this technology solves in the art market, it is no wonder that there have been \$31.7 billion worth of NFT transactions on the most well-known NFT marketplace, OpenSea, since its inception in 2017.⁷

The numerous physicality, authenticity, and provenance problems facing the art market create complex legal problems that are not properly addressed by the various applicable areas of law. Instead, blockchain is an innovative technology that presents a novel solution to these regulatory and enforcement problems within the art market. This paper discusses these art market problems and technology solutions and proceeds in four parts. In Part I, the paper describes art market problems that require regulation. Part II explains how legal enforcement mechanisms fail to properly address art market problems. In Part III, the paper explains the characteristics of blockchain technology that make it a valuable tool for art market regulation. The paper compares legal mechanisms and blockchain technology as two tools in the art market regulatory system. Part IV discusses the 1958 traditional art project by Yves Klein that illustrates NFT concepts sixty years ahead of its time and its recreation as an NFT project on the Ethereum blockchain in 2017. Finally, the paper concludes that blockchains are a useful tool to solve art market regulation problems and addresses the potential of blockchain technology to revolutionize the art market.

I. PROBLEMS IN THE TRADITIONAL ART MARKET

The traditional art world presents many problems, such as difficulties in completing transfers and establishing provenance for a piece. Record keeping problems are exacerbated by the art community’s culture of intentionally concealing information to preserve anonymity and to manipulate prices. The lack of information and the practical challenges of handling, storing, transferring, and protecting physical artworks create inefficiencies in the traditional art market. Some, but not all, of these problems also arise in the digital art market.

A. Physical Asset Weaknesses

Some of the major problems in the traditional art world are caused by the physical form of traditional art.⁸ Physical artworks can be damaged by a plethora of conditions such as fire, water, and light.⁹ The art must be stored in a location with the right conditions to preserve the artwork.¹⁰ Theft is another threat to physical artworks, requiring security measures for

⁷ *OpenSea NFT Marketplace Statistics*, DAPPRADAR, <https://dappradar.com/ethereum/marketplaces/opensea>.

⁸ See Artwork Archive, *The Cost of Maintaining a Fine Art Collection*, <https://www.artworkarchive.com/blog/the-cost-of-maintaining-a-fine-art-collection>.

⁹ *Id.*

¹⁰ Artwork Archive, *supra* note 8.

valuable artworks.¹¹ Transporting artwork between locations or transferring artwork from an owner to a buyer may be practically difficult, especially if the piece is large, fragile, or must be kept in certain conditions.¹²

The physical form of traditional artworks increases the financial burden on the owner.¹³ Storage, security, and conservation efforts are often costly.¹⁴ Owners often insure their art against damage or theft.¹⁵ There can be high transaction costs to transfer the piece and high transportation costs to move the artwork.¹⁶ Transporting a piece of art across national boundaries requires filling out import and export forms, getting approval, and paying import and export tariffs.¹⁷ Furthermore, both parties to a transaction may pay to have the piece appraised and authenticated by professionals.¹⁸

B. Lack of Information

The art market is inefficient—it suffers from a market failure due to inadequate information. An efficient market transacts at a price that “incorporate[s] all available information.”¹⁹ Market failures arise when actors in the market lack information, “caus[ing] buyers and sellers to misallocate resources.”²⁰ “Accordingly, the foundation of an efficient market lies in its ability to provide reliable information . . . so that buyers and sellers can dedicate resources to their wisest, most efficient uses.”²¹ Often, legal tools are utilized to provide information in markets that foster secrecy by requiring information dissemination or by forbidding the concealment of information.²²

There is a major lack of market information in the traditional art market. “The art industry refuses . . . to provide reliable information . . . due in part to the nature of art as a commodity, the culture and history of the market, and the laws governing its trade.”²³ Owners and dealers conceal provenance and sale information “to drive up prices artificially.”²⁴ It is difficult to determine the market price of an artwork unless a similar piece was recently, publicly sold.²⁵ However, most art is transferred in private, without publicly disclosed price information.²⁶ The lack of information “leads to title problems and . . . reduces trust” in the market.²⁷ The culture of secrecy leads to transactions at inefficient prices.²⁸ “Even the most

¹¹ Gregory Day, *Explaining the Art Market's Thefts, Frauds, and Forgeries (And Why the Art Market Does Not Seem to Care)*, 16 VAND. J. ENT. & TECH. L. 457, 470 (2014) (“[S]tolen art constitutes the third most commonly traded illicit good.”).

¹² Artwork Archive, *supra* note 8.

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ Art Business Info. For Artists, *International Art Shipping: How to Ship / Export Art to Other Countries*, <https://www.artbusinessinfo.com/how-to-ship-art-guide-for-artists.html>.

¹⁸ Artwork Archive, *supra* note 8.

¹⁹ Day, *supra* note 11, at 462.

²⁰ *Id.* at 463.

²¹ *Id.* at 464.

²² *Id.*

²³ *Id.* at 465.

²⁴ *Id.* at 459-60.

²⁵ Murray Coleman, *The Pros and Cons of Investing in Art*, WALL ST. J. (Mar. 14, 2014), <https://www.wsj.com/articles/SB10001424052702304020104579433253696361022>.

²⁶ *Id.*

²⁷ *Id.*

²⁸ Day, *supra* note 11, at 459-60 (quoting Stephen D. Brodie).

diligent art consumer cannot typically access enough reliable information to determine with confidence whether a proposed art deal is a wise investment.”²⁹

Ownership and authenticity information is crucial for establishing a fair market price. A piece of artwork with strongly supported provenance is more valuable than a piece with less established provenance.³⁰ For an artwork to have value, the owner must be able to sell the artwork on the market.³¹ To execute a legitimate sale, the owner must present enough evidence to convince the buyer that they are the legitimate owner of an authentic artwork.

Buyers are cautious when purchasing a valuable artwork because they risk purchasing a forgery, which is worth much less money than the authentic, legitimate artwork.³² Forgeries continuously improve in quality as technology advances—artificial intelligence can produce almost identical replicas that may be indistinguishable from the original.³³ “[N]o transaction can ever rise above scrutiny.”³⁴ Authenticators cannot be 100% sure that a piece is authentic—they must make their best, educated decision as an expert with the information they have.³⁵ Additionally, buyers scrutinize the owner’s claim to the artwork. If a buyer, in good faith, purchases stolen artwork, they may have to return the artwork to its rightful owner without a refund.³⁶ The most compelling way to prove ownership of an authentic artwork is through well-established provenance that states all relevant information about the work’s transaction history, such as the date, price, and parties involved.³⁷ Establishing complete provenance for artwork that is centuries old, when transactions have not been well-recorded, may be impossible.³⁸ Therefore, the more provenance information provided by the owner to the buyer, the more confidence the buyer has that a piece is authentic. The traditional art market system places ownership rights in the person with the best provenance evidence, without complete confidence that they are the true owner of an authentic artwork.

C. Transfer Issues

Physical artwork transfers are inefficient because of the physical challenges and art market’s culture. Transactions can be prolonged and disorganized because owners and buyers often negotiate anonymously through an intermediary or art dealer.³⁹ The art industry standard is to use middlemen in confidential transactions to reduce the chance “that publicizing . . .

²⁹ *Id.* at 461.

³⁰ *Id.* at 477-78.

³¹ Amena Saad, *How Market Value Can Help You Determine the True Worth of Company or Asset*, INSIDER (. 13, 2021), <https://www.businessinsider.com/market-value>.

³² See Day, *supra* note 11, at 477-78.

³³ See Brandon Lorimer, *MSCHF sells of 1000 copies of Andy Warhol’s ‘Fairies,’* (Nov. 1, 2021), <https://www.art-critique.com/en/2021/11/mschf-sells-off-1000-copies-of-andy-warhols-fairies/> (describing the use of AI to create 999 forgeries of a pen drawing by Warhol which were sold after being mixed with the original piece).

³⁴ Day, *supra* note 11, at 461 (referring to a well-known private gallery, Knoedler & Company, that sold \$40 million worth of forged paintings).

³⁵ Rahm, *supra* note 1.

³⁶ John H. Merryman, *The Good Faith Acquisition of Stolen Art*, STANFORD LAW SCHOOL (Oct. 2007), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1025515.

³⁷ Jodi Heckel, *Provenance Exhibition Shows Challenges of Tracing the Path of Ownership of Artwork*, ILLINOIS NEWS BUREAU (May 9, 2017), <https://news.illinois.edu/view/6367/498063>.

³⁸ *Id.*

³⁹ Coleman, *supra* note 25; Day, *supra* note 11.

collections will invite criminals to steal from them.”⁴⁰ The culture of secrecy makes it difficult for the laypeople who are not established art market participants to become active in the market.

Artwork transfer inefficiencies include the diversion of profits from artists and owners to middlemen. Galleries, auction houses, and art dealers charge fees for exhibiting and selling artworks.⁴¹ The current transaction system “primarily benefit[s] the big auction houses and the major dealers” which take a cut of the sale price.⁴² The middleman fee system reduces the benefit of the transaction for both the owner and the buyer.

While owners may choose to transfer or license duplication rights to others, copies can be made without such a voluntary transfer. Owners risk their artwork being copied, duplicated, replicated, or monetized, without their consent and without receiving any compensation.⁴³ Duplication is more problematic in the digital art market because digital art can be quickly duplicated with extreme ease—the average internet user can right-click-save an image online. Copyright and trademark laws have developed to provide owners with a tool to enforce their duplication rights.

II. LEGAL METHODS FAIL TO SOLVE ART MARKET PROBLEMS

Although the art market is mostly unregulated, actors in the market can self-regulate by using legal mechanisms to enforce their rights and protect the value of their artwork.⁴⁴ Copyright and trademark laws address ownership and duplication problems in the art market by providing legal mechanisms for intellectual property (IP) owners to enforce their rights in a court of law.⁴⁵ However, these legal enforcement mechanisms are not effective methods of regulation in the art market.

IP law allows owners to prevent others from copying their artworks. To protect the integrity of their brand, an IP owner may assert a claim against a copier for trademark infringement.⁴⁶ Copyright law allows owners to enjoin an infringing party and get money remedies through the judicial system.⁴⁷ A copyright confers exclusive rights on the author of the work, including the right to reproduce, adapt, distribute, and publicly display the work.⁴⁸ Owning a copyright is “distinct” from ownership of an artwork because only the copyright owner can assert a legal claim against infringers.⁴⁹ A copyright can be transferred from the

⁴⁰ Day, *supra* note 11, at 470.

⁴¹ See Sotheby’s, *Seller’s Commission*,

<https://www.sothebys.com/en/glossary#:~:text=For%20most%20auctions%2C%20including%20those,10%25%20of%20the%20hammer%20price.>

⁴² Isaac Kaplan, *Should the Art Market Be More Heavily Regulated?*, ARTSY (May 23, 2016),

<https://www.artsy.net/article/artsy-editorial-should-the-art-market-be-more-heavily-regulated> (quoting Stephen D. Brodie).

⁴³ Ann A. Andres, *Reproduction Rights for Fine Art*, ART LAW (1999),

<http://www.tfaoi.com/articles/andres/aa2.htm#:~:text=When%20you%20make%20prints%20of,a%20right%20to%20be%20compensated.&text=Usually%2C%20artists%20will%20grant%20such,prints%20for%20their%20own%20purposes.>

⁴⁴ See 17 U.S.C. §§ 502-505 (1976).

⁴⁵ *Id.*; United States Patent and Trademark Office, *Trademark, patent, or copyright*, USPTO (Mar. 31, 2021), <https://www.uspto.gov/trademarks/basics/trademark-patent-copyright>.

⁴⁶ United States Patent and Trademark Office, *supra* note 45.

⁴⁷ 17 U.S.C. §§ 501-505 (1976).

⁴⁸ 17 U.S.C. § 106 (1976). The author owns the work they created. See John Locke, *Two Treatises of Government*, (1689) (Arguing that natural rights of property are in your own body, so you are entitled to the fruits of your own labor).

⁴⁹ See 17 U.S.C. § 202 (1976).

author to subsequent owners.⁵⁰ To provide constructive notice to market participants, the Copyright Act of 1976 requires formal written contracts for all copyright transfers because of the intangible nature of copyrights creating ownership confusion.⁵¹ However, recording the transfer is optional.⁵² The written contract requirement makes transfers more expensive by necessitating the involvement of professionals, including lawyers, experts, or advisors. The IP law mechanism does not sufficiently address art market problems in the traditional or the digital art market.

Several issues arise from the application of IP law within the NFT market. First, blockchain art is physically located on thousands of computer “nodes” around the world, placing the art outside of any jurisdiction.⁵³ Therefore, enforcing copyright and trademark law on NFTs that are owned and transacted by anonymous users across the world may be difficult.

Second, assigning IP rights to the correct owners is difficult for generative art projects. Many NFT projects use generative art as the image for their NFTs.⁵⁴ Generative art is computer generated—the developer writes the code in a “smart contract” on the blockchain, instructing the computer to generate a certain number of pieces of art with specific characteristics.⁵⁵ A user calls a function on the smart contract to “mint” an NFT.⁵⁶ The computer, acting per the user’s command, follows the smart contract instructions coded by the developer to generate a piece of art.⁵⁷ It is difficult to discern who the author of generative art is for copyright law purposes. The author could be the developer, the computer, or the user. IP law currently assigns rights to the users of generative art.⁵⁸ However, this assignment is illogical and should be rethought because the developer may want to enforce trademark law against infringers to preserve their brand name.

Third, the NFT community culture minimizes the importance of IP rights. NFT-native art, which was digital at its inception and is not a reproduction of a traditional artwork, is less likely to have IP rights asserted because of the ethos in the community. The NFT community does not care if people right-click-save their images, in fact, they encourage it. The owner values having the underlying code in their wallet, and any further use of the image associated with their NFT is free marketing.

The lack of IP law enforcement in the NFT space is exemplified through the numerous projects that release in the crypto commons with a public copyright license (CC0).⁵⁹ CC0 projects relinquish all intellectual property rights related to the project that are released into the public domain.⁶⁰ CC0 projects view unauthorized uses of their works as free marketing that increase the value of their NFTs. Bored Ape Yacht Club (BAYC) took an IP rights approach similar to CC0, except the developers released the IP rights to BAYC owners and not to the

⁵⁰ 17 U.S.C. § 201(d) (1976).

⁵¹ 17 U.S.C. § 102 (1976).

⁵² *Id.*

⁵³ See Ethereum, *What is Ethereum?* (Nov. 30, 2021), <https://ethereum.org/en/>.

⁵⁴ See Ethereum, *Non-Fungible Tokens (NFT)* (Nov. 30, 2021), <https://ethereum.org/en/nft/>.

⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ *Id.*

⁵⁸ This is the same solution as British law.

⁵⁹ William M. Peaster, *NFTs and CC0*, BANKLESS (Nov. 30, 2021), <https://metaversal.banklesshq.com/p/nfts-and-cc0>.

⁶⁰ *Id.*

public.⁶¹ BAYC is the second most established and valuable NFT project, with a current floor price of 71.5 ETH or over \$115,000 at the time of writing.⁶² Derivative NFT projects have developed, such as Mutant Ape Yacht Club, which allows Bored Ape owners to create a second NFT that resembles their Bored Ape with mutant characteristics.⁶³ These Mutant Apes can be sold by the Bored Ape owner, further increasing the value of their Bored Ape.⁶⁴

In contrast to NFT-native art, IP rights are more likely to be asserted against NFTs that replicate art from the traditional art market. For example, Quentin Tarantino, a famous Hollywood director, created NFTs of his handwritten screenplay for *Pulp Fiction*, one of his most well-known films.⁶⁵ The NFT is an image of Tarantino's handwritten notes on the screenplay he wrote.⁶⁶ However, Miramax, the movie production company, filed suit claiming that by releasing these NFTs, Tarantino infringed on their copyright over the movie.⁶⁷ With the current copyright law system in place, Miramax would likely win this dispute in court, although the parties settled the dispute outside of court in September 2022.⁶⁸ However, this is not the most socially desirable outcome because it harms the ability of Tarantino to benefit from his work. The Tarantino NFT case illustrates how the current regulatory system benefits middlemen instead of artists.

Overall, the current legal system regulating the art market is inefficient and does not effectively solve most of the problems in the traditional art market. IP law artificially establishes an owner to an original piece of art and artificially confers on the owner certain rights they can enforce through the judicial system. A court must enforce these rights through the threat of physical or monetary coercion by law enforcement officers. Copyright and trademark laws are tools that regulate the art market. Current legal mechanisms are impractical and not useful when applied to NFTs. Blockchain technology can better solve the art market regulation problems that copyright and trademark law address.

III. BLOCKCHAIN TECHNOLOGY SOLVES MOST ART MARKET PROBLEMS

Blockchain technology is a tool that can improve art market regulation by enabling more efficient and effective self-regulation. In the digital art market, code is law. Reliance on artificial legal enforcement mechanisms is unnecessary because users must follow the rules within smart contracts. The need for the threat of force or monetary coercion to enforce ownership or transfers is eliminated because the rules of the smart contracts make noncompliance impossible. The inherent characteristics of blockchain technology are solutions to traditional art market problems.

NFTs solve most of the problems in the art market without the expense and inefficiency of a centralized enforcement system. NFTs exist on the Ethereum blockchain which is a

⁶¹ Gabriel Ayuso, *BAYC Copyright Model*, TWITTER (Oct. 2, 2021), <https://twitter.com/gabrielayuso/status/1444482868252532743>.

⁶² BoredApeYachtClub, *Bored Ape Yacht Club*, OPENSEA, <https://opensea.io/collection/boredapeyachtclub>.

⁶³ 9056D1, *Mutant Ape Yacht Club*, OPENSEA, <https://opensea.io/collection/mutant-ape-yacht-club>.

⁶⁴ *Id.*

⁶⁵ Tarantino NFTs, *The Tarantino NFT Collection*, <https://tarantinonfts.com/>; Frank Pallotta, *Miramax is suing Quentin Tarantino over 'Pulp Fiction' NFTs*, CNN BUSINESS (Nov. 17, 2021), <https://www.cnn.com/2021/11/17/investing/quentin-tarantino-lawsuit-pulp-fiction-nfts/index.html>.

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ Eli Tan, *Quentin Tarantino Reaches Settlement with Miramax in 'Pulp Fiction' NFT Lawsuit*, COINDESK (Sep. 9, 2022), <https://www.coindesk.com/business/2022/09/09/quentin-tarantino-reaches-settlement-with-miramax-in-pulp-fiction-nft-lawsuit/>.

decentralized network that is similar to the better-known blockchain, Bitcoin.⁶⁹ NFTs are code that exists within smart contracts on Ethereum.⁷⁰ To own or transfer an NFT, users must interact with its smart contract.⁷¹ Each smart contract is an automated process implemented by coders that “can add tremendous value and efficiency by minimizing effort, error, and risk.”⁷² A smart contract enables people to agree on a set of conditions that send instructions to a computer that performs a transaction.⁷³ Smart contracts are tamper-proof, verifiable, and trustless because they are decentralized—they do not rely on a third-party or middleman.⁷⁴ However, they are not technically a contract, in a legal sense, and they are not enforced by the judicial system.⁷⁵

The digital artwork associated with an NFT is linked within the NFT’s code. The NFT makes the image “a one-of-a-kind object in the world.”⁷⁶ The image associated with an NFT is useful to represent the code and makes owning and trading NFTs fun for users.⁷⁷ However, the value of the NFT is contained in the code, not just the image. NFTs also derive some of their value from their scarcity. NFTs are “entirely revolutionary” because they “have made it possible to digitize scarcity.”⁷⁸ Scarcity is enforced through smart contracts stating that no more than a certain amount of NFTs can ever be created. People get a “sense of fulfillment” from collecting NFTs because of their scarcity.⁷⁹ Photography prints illustrate NFT scarcity concepts. Photographers often release their photographs in a series of prints of the original image. Even though anybody can print the same photograph if it is accessible, the original prints sold by the photographer are the valuable, “real” artworks. Any other printed images may be identical, yet they are not worth much in comparison to the original prints. In the same way, the image that is attached to the NFT code is a unique artwork that is more valuable than copies of the digital image.

Because NFTs exist on the blockchain, they do not require optional participation of owners to track their provenance.⁸⁰ Rather, all NFT ownership and transfer information is automatically tracked from the time of its genesis on the blockchain.⁸¹ The Ethereum blockchain ledger stores the token transfer information.⁸² Anybody can access the transfer information of a token and independently verify that the token is legitimate by tracing its transfers back in time.⁸³

⁶⁹ Ethereum, *supra* note 53; Mitchell F. Chan, *Digital Zones of Immaterial Pictorial Sensibility*, BLUEPAPER 12 (Aug. 2017), <https://ipfs.io/ipfs/QmcdKPjcJgYX2k7weqZLoKjHqB9tWxEV5oKBcPV6L8b5dD>.

⁷⁰ Ethereum, *supra* note 54.

⁷¹ *Id.*

⁷² Deborah R. Gerhardt & David Thaw, *Bot Contracts*, 62 ARIZ. L. REV. 877, 879 (2020); Ethereum, *supra* note 53; Chan, *supra* note 69, at 12-13.

⁷³ Gerhardt & Thaw, *supra* note 72, at 878-79.

⁷⁴ Chan, *supra* note 69, at 12-13.

⁷⁵ Gerhardt & Thaw, *supra* note 72.

⁷⁶ Adam McBride, NFT APE, 18 (2021).

⁷⁷ See Jeff Lane & Kevin Warburton, *Legal Issues in the Booming Arts Industry – What You Need to Know*, LEXOLOGY (Jan. 28, 2021), <https://www.lexology.com/library/detail.aspx?g=0d64c84b-a017-4a9e-9781-7a603f7aac20>.

⁷⁸ McBride, *supra* note 76.

⁷⁹ *Id.* at 20.

⁸⁰ Although the actual code comprising NFTs exists entirely on the blockchain, many projects are incorporating in-real-life physical components. For example, when purchasing an NFT, the buyer also receives a t-shirt in the mail.

⁸¹ Ethereum, *supra* note 53.

⁸² *Id.*

⁸³ *Id.*

Furthermore, NFTs provide utility beyond their aesthetic appeal.⁸⁴ If a user has an NFT in their wallet on the blockchain, the NFT can act as a membership card to grant access to otherwise closed spaces.⁸⁵ To join certain Discords—online chat rooms where people in the NFT community discuss ideas—you must own an NFT from that community.⁸⁶ Also, having a profile picture (PFP) on Twitter that is an NFT is a status symbol in the NFT community.⁸⁷

There are several categories of NFT projects on Ethereum that are valuable. NFTs that were coded on the blockchain in 2017 are some of the first NFT projects, making them relatively old. CryptoPunks, CryptoKitties, and Digital Zones of Immaterial Pictorial Sensibility are examples of 2017 NFTs. Just as the first generation of collectible items is the most valuable, these 2017 NFT projects are valuable. Now, there are thousands of NFT projects added on the blockchain each year, but the number of 2017 NFT projects will always be limited to the few dozen from the initial 2017 NFT time period, which makes them scarce and, therefore, valuable.

Generative blockchain art also utilizes scarcity to create value. Generative art's smart contracts create unique art for individual users.⁸⁸ The smart contract uses each user's hash—a unique string of numbers and letters—to randomly create an NFT.⁸⁹ Since each artwork produced from the smart contract is unique to each hash, the resulting image is unpredictable.⁹⁰ Some NFTs will have rare characteristics because the developer coded the smart contract to only assign that characteristic to a small number of NFTs.⁹¹ The resulting NFTs with rare characteristics are the most valuable because of their scarcity.

NFT value is also generated from social consensus. Whatever people in society agree is valuable, has value. For example, U.S. Dollar bills are pieces of paper that hold value because people in society agree that they are valuable and will accept them as a form of payment. “As long as enough people agree that there is value to [NFTs], there is value.”⁹² NFT PFPs are valuable because they confer social status. Although PFPs derive some value from their aesthetic appeal, the real value is being able to verify that you own the unique NFT in your profile picture. Twitter now verifies NFT PFPs.⁹³ Once a user verifies that they have the NFT in their blockchain wallet, Twitter displays the user's PFP as a hexagon, rather than the usual circle.⁹⁴

Blockchain technology and NFTs can solve most of the problems in the art market. NFTs eliminate the physical asset weaknesses inherent in the traditional art market. Blockchain's decentralized and open-access ledger provides near-perfect market information.

⁸⁴ See Ron Jaradat, *The Utility NFT Classification Guide*, MEDIUM (Sep. 30, 2021), <https://medium.com/liquiditeam/the-utility-nft-classification-guide-c4e4be55009e>.

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ See Despina Karpathiou, *Bragging Rights: Twitter Previews Verification Badge for NFT Profile Pics*, COINTELEGRAPH (Sep. 30, 2021), <https://cointelegraph.com/news/bragging-rights-twitter-previews-verification-badge-for-nft-profile-pics>.

⁸⁸ Brian Droitcour, *Generative Art and NFTs*, ART NEWS (Mar. 11, 2021), <https://www.artnews.com/list/art-in-america/features/generative-art-and-nfts-1234586572/>.

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ *Id.*

⁹² McBride, *supra* note 76, at 111.

⁹³ Will Gottsegen, *Twitter Launches NFT Profile Picture Verification*, COINDESK (Jan. 20, 2022), <https://www.coindesk.com/business/2022/01/20/twitter-launches-nft-profile-picture-verification/>.

⁹⁴ *Id.*

The platforms built on top of Ethereum adopt the NFT community's values, reducing the effect of middlemen on transfers in the market. Overall, blockchain technology addresses most of the problems in the art market, making it a tool to increase efficiency and benefit market participants more than the current art market regulatory system.

A. Digital Asset Strengths

Digital art on the blockchain has characteristics that make it more secure than physical art. NFTs cannot be duplicated, copied, or forged without easy detection.⁹⁵ Even if a user saves the image from an NFT, any user can check the blockchain's immutable transaction ledger to verify the authenticity of the NFT.⁹⁶ To simplify this verification process for people who do not understand computer code, centralized sources check and verify NFTs.⁹⁷ Furthermore, digital art is secure. NFTs exist forever and cannot be destroyed or stolen.⁹⁸ Digital art does not need to be kept in special conditions or conserved because it cannot be damaged. Digital art has no transportation costs since transfers are completed entirely online. Theft is impossible unless the owner loses or unintentionally gives away their private key. The digital form of NFTs solves many problems and impracticalities created by the physical form of art in the traditional art market.

The digital form of NFTs significantly reduces the financial burden of owning and transferring physical artworks. With digital art, paying for storage, transportation, and conservation is eliminated. Insurance for damage or theft of digital artwork is also unnecessary. Digital art can be transferred across national borders with ease and without import and export processes and tariffs. Furthermore, paying for authentications and appraisals are unnecessary, since the information provided by these experts is easily accessible on the blockchain to anyone with a computer.

Although most financial burdens from the physical art market are reduced, two remain: transaction costs and security costs. First, Ethereum charges gas fees for the block space required to execute a transaction on the blockchain.⁹⁹ While high gas fees reduce liquidity in the market for lower-priced items, Ethereum developers have launched Ethereum 2.0 which reduces gas fees by scaling the blockchain to enable more transactions at a lower cost.¹⁰⁰ Ethereum 2.0 greatly reduced gas prices and the associated environmental impact when it was implemented in 2022.¹⁰¹ Second, users can take additional measures to ensure the security of digital art on the blockchain. If an owner wishes to protect their NFTs, they can purchase a hardware wallet to secure their digital assets. For example, a Ledger hardware wallet costs around \$120 and provides a secondary layer of protection from theft.¹⁰² Overall, the practical and financial burdens of owning and transacting NFTs are much lower than in the traditional art market.

⁹⁵ See Ethereum, *supra* note 54.

⁹⁶ *Id.*

⁹⁷ For example, OpenSea and Twitter.

⁹⁸ Even if the thousands of computers that comprise the blockchain stopped working, there are the equivalent of screenshots of the blockchain ledger that would enable users to recreate it perfectly, without losing their property.

⁹⁹ Vitalik Buterin, *Ethereum Whitepaper*, ETHEREUM, (2013) <https://ethereum.org/en/whitepaper/>.

¹⁰⁰ ETHEREUM (Ethereum 2.0 will change the way that transactions occur on the blockchain from proof of work to proof of stake (POS).) <https://ethereum.org/en/eth2/>.

¹⁰¹ When Ethereum moves to POS, the negative environmental impact of the technology will drop by 99.95%.

¹⁰² LEDGER, <https://www.ledger.com/>.

B. Transparent Information

Blockchains' decentralized ledgers provide nearly perfect information transparency for an efficient art market. Blockchains enable true, verifiable, universally recognized, trustless digital ownership and transfers.¹⁰³ NFT transfers cannot take place without recording the information of the owner, buyer, item, time, and price on the blockchain, resulting in nearly perfect provenance.¹⁰⁴ Blockchains eliminate most of the transfer inefficiencies that arise because of anonymity and secrecy in the traditional art market while maintaining anonymity in the NFT art market. Blockchain technology's decentralized and transparent ledger solves the authenticity and provenance issues that exist in the traditional art market.

Blockchain Art Collective exemplifies how blockchain technology improves provenance efforts.¹⁰⁵ The Blockchain Art Collective attempts to solve provenance and authenticity issues by providing a sticker made of tamper-evident material that owners attach to physical pieces of art.¹⁰⁶ By registering the sticker with the piece of art on the blockchain, a person confirms the artwork's authenticity.¹⁰⁷ Once registered on the blockchain, the physical piece of art is forever tied to its online identity which cannot be altered.¹⁰⁸ Every subsequent transfer of the artwork can be recorded on the blockchain, providing a secure and transparent record of provenance.¹⁰⁹ An owner can purchase the Blockchain Art Collective's starter kit and instructions on their website for \$20.¹¹⁰ The Blockchain Art Collective provides the tools to solve provenance and authentication issues for physical artworks, but its effectiveness is limited by optional participation in record keeping and placing a physical sticker on an artwork. However, Blockchain Art Collective takes a step in the right direction away from traditional record keeping and toward decentralized and secure blockchains that provide better provenance information.

Transparent provenance provides extensive price information in the NFT market. While traditional art market transactions occur behind closed doors, digital art transactions happen transparently on blockchain platforms.¹¹¹ On OpenSea, buyers and sellers can filter NFTs by price and can compare the listed prices and most recent sale prices of similar NFTs to assess fair prices for listing and buying.¹¹² OpenSea's marketplace is much more transparent and efficient than traditional art marketplaces because of the low transaction cost to find price information.

C. Efficient Transfers

Transactions on blockchains are more efficient and benefit individual actors more than the traditional art market by reducing the power of middlemen.¹¹³ Blockchains provide the capability for anonymous peer-to-peer transfers and intermediaries in the NFT community have different values than middlemen in the traditional art market. Competition between platforms

¹⁰³ See Ethereum, *supra* note 53.

¹⁰⁴ *Id.*

¹⁰⁵ BLOCKCHAIN ART COLLECTIVE, <https://blockchainartcollective.com/>.

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

¹¹¹ OPENSEA, <https://opensea.io/>.

¹¹² While traditional art market transactions occur behind closed doors, digital art transactions happen transparently on blockchain platforms like OpenSea.

¹¹³ McBride, *supra* note 76, at 19.

to provide an NFT marketplace and the community value to charge a 2.5% take rate, keeps intermediary fees low.¹¹⁴

For example, OpenSea offers a huge increase in efficiency and decreased costs for transactions of art compared to the traditional art market. OpenSea speeds up NFT transfer negotiations. On OpenSea, owners of NFTs display a gallery of their artworks and can list their NFTs for sale at any price or keep their NFT delisted, meaning it cannot be purchased.¹¹⁵ Buyers can sort through different NFT projects to find one they want to buy.¹¹⁶ A buyer can purchase the NFT at the listed price or can put an offer on a listed or delisted NFT.¹¹⁷ The owner can accept or reject that offer.¹¹⁸ By cutting out art dealers, the OpenSea platform enables efficient negotiation and transfers of NFTs.

OpenSea also increases financial benefits to NFT artists. In the traditional art market, for a typical sale, Sotheby's takes 10% of the price of the item sold at auction.¹¹⁹ Additionally, the buyer must pay Sotheby's 25% of the price of the item they bought in addition to the full price of the item.¹²⁰ Altogether, the owner selling artwork at Sotheby's gets 90% of the purchase price, the buyer pays 125% of the purchase price, and Sotheby's receives 35% of the purchase price. In contrast, OpenSea takes only 2.5% of the purchase price.¹²¹ OpenSea allows NFT artists to set up to a 10% royalty fee for each subsequent transaction of their NFT on the secondary market, enabling artists to continually benefit as their art appreciates over time.¹²² The NFT artist gets 97.5% of the purchase price *and* up to 10% of all future sales. The buyer pays 100% of the purchase price and OpenSea receives 2.5% of the purchase price. OpenSea's more efficient marketplace significantly reduces the high take rate of the middleman and transfers it to the NFT artist.

Blockchains also present unique transfer capabilities that are practically impossible in the traditional art world, such as airdrops. Since wallet addresses are publicly available, project creators can send an "airdrop" of NFTs to their following or a giveaway winner. The *manymatts* project created another unique transfer method by allowing people to scan a near-field communication (NFC) chip, which enables wireless communication between devices, that the project creator, Matt, had surgically embedded in his hand.¹²³ When scanned with a phone, the NFC chip transfers a *manymatt* NFT to the phone.¹²⁴ Additionally, if a person finds a *manymatt* sticker, scans it, and direct messages it to Matt on Twitter, he will airdrop them an

¹¹⁴ OPENSEA, *supra* note 112.

¹¹⁵ *Id.*

¹¹⁶ *Id.*

¹¹⁷ *Id.*

¹¹⁸ *Id.*

¹¹⁹ SOTHEBYS, *Glossary, Seller's Commission*,

<https://www.sothebys.com/en/glossary#:~:text=For%20most%20auctions%2C%20including%20those,10%25%20of%20the%20hammer%20price.>

¹²⁰ SOTHEBYS, *Buyer's Premium Chart* (Feb. 1, 2021), <https://www.sothebys.com/1-february-2021-buyers-premium.pdf>. However, this percentage decreases to 20% for items sold for more than \$400,000, and to 13.9% for items sold for more than \$4,000,000. *Id.*

¹²¹ OPENSEA, What are OpenSea's fees? (November 2021), <https://support.opensea.io/hc/en-us/articles/1500011590241-What-are-OpenSea-s-fees->.

¹²² *Id.*

¹²³ THEMANYMATTS, <https://themanymatts.lol/>; LIFE AUGMENTED, *What is an NFC Chip?*,

https://www.st.com/content/st_com/en/support/learning/st25-education/nfc-chip.html.

¹²⁴ THEMANYMATTS, *supra* note 124.

NFT.¹²⁵ Now his followers try to find him or his stickers in the physical world, adding a unique in-person interaction to his project.

Blockchain and digital art solve most problems that arise in the traditional art market. Blockchain technology presents a useful tool for the regulation of ownership and transactions in the art market. NFT transactions on the blockchain reduce transaction costs and are extremely efficient. To further illustrate NFTs' beneficial concepts, this paper next analyzes a traditional art project by Yves Klein that was the precursor to the first NFT which explores the concept of ownership of an intangible asset. Finally, the paper will explore Mitchell Chan's recreation of Yves Klein's project in digital form on Ethereum.

IV. THE ZONES OF IMMATERIAL PICTORIAL SENSIBILITY

Yves Klein conceptualized the first NFT in 1958 in Paris, France.¹²⁶ The Zones of Immaterial Pictorial Sensibility (Zones) project by Klein illustrates the concept of NFTs, confronting immateriality, concepts of ownership, and the underlying motivations in the NFT market.

Earlier in his career, Klein became famous for his "monochrome paintings of deep, hypnotic blue."¹²⁷ He registered the color with the National Institute of Industrial Property in France as "International Klein Blue."¹²⁸ On April 28, 1958—Klein's 30th birthday—he held an exhibition at the Galerie Iris Clert in Paris which around 3,000 people attended.¹²⁹ The exhibition experience began when attendees saw the windows of the Galerie Iris Clert painted blue.¹³⁰ Next, attendees walked inside the gallery by going through a blue curtain, seen below.¹³¹

¹²⁵ *Id.*

¹²⁶ Chan, *supra* note 69, at 2.

¹²⁷ *Id.* at 2.

¹²⁸ *Id.* at 5.

¹²⁹ *Id.* at 5-6.

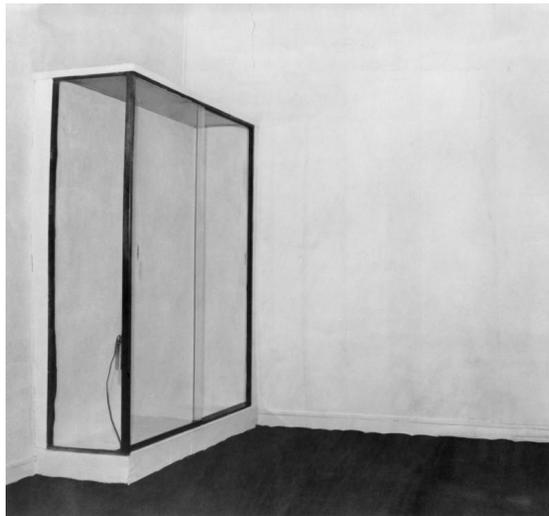
¹³⁰ *Id.*

¹³¹ *Id.*; *Entrance of the Galerie Iris Clert during the opening of the "Void" exhibition*, YVESKLEIN.COM (Apr. 28, 1958),

[https://www.yvesklein.com/en/ressources/index?sb=_created&sd=desc&s\[\]=22#/en/ressources/view/photo/458/entrance-of-the-galerie-iris-clert-during-the-opening-of-the-void-exhibition?s\[\]=22&sb=_created&sd=desc](https://www.yvesklein.com/en/ressources/index?sb=_created&sd=desc&s[]=22#/en/ressources/view/photo/458/entrance-of-the-galerie-iris-clert-during-the-opening-of-the-void-exhibition?s[]=22&sb=_created&sd=desc).



Once inside, they were handed a blue cocktail before entering the exhibit of the Zones.¹³² There, attendees were confronted with a “small, empty white room” displaying Klein’s immaterial artwork, seen below.¹³³



The Zones consisted of an empty space that was “imbued with the sensibility” of International Klein Blue.¹³⁴ This art exhibition explored the “relationship between experience and material[ity].”¹³⁵ Klein sought to transcend “the practical and sensorial limitations of the physical form” by manifesting his artwork in an immaterial form.¹³⁶ He believed that an art experience could be “created and communicated” without using physical materials.¹³⁷ With the Zones project, Klein claimed to “have overcome the problematics of art.”¹³⁸ Klein argued

¹³² Chan, *supra* note 69, at 5-6.

¹³³ *Id.*; *The “Immaterial Pictorial Sensibility”*, YVESKLEIN.COM (Apr. 28, 1958), [https://www.yvesklein.com/en/ressources/index?sb=_created&sd=desc&s\[\]=22#/en/ressources/view/article/11/the-immaterial-pictorial-sensibility?s\[\]=22&sb=_created&sd=desc](https://www.yvesklein.com/en/ressources/index?sb=_created&sd=desc&s[]=22#/en/ressources/view/article/11/the-immaterial-pictorial-sensibility?s[]=22&sb=_created&sd=desc).

¹³⁴ Chan, *supra* note 69, at 3.

¹³⁵ *Id.*

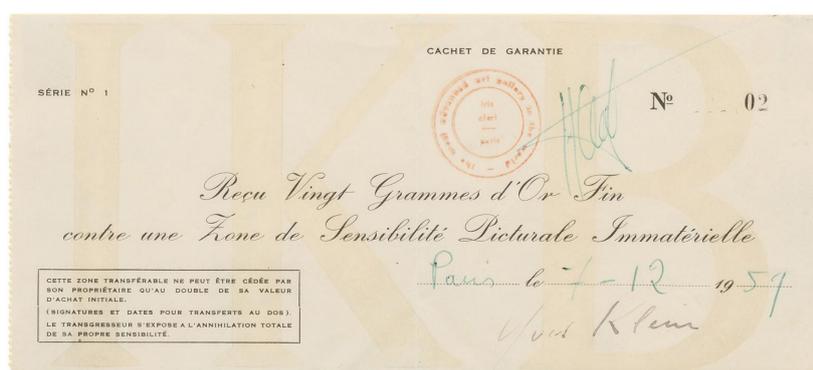
¹³⁶ *Id.* at 5.

¹³⁷ *Id.* at 3.

¹³⁸ *Id.* at 2 (quoting Yves Klein, Preparation and Presentation of the Exhibition on April 28, 1958).

that “the immaterialization of the invisible and intangible canvas . . . act[s] upon the sensible vehicles or bodies of the gallery visitors with much more effectiveness than ordinary, physical, representational pictures.”¹³⁹ The presentation of different forms of blue as attendees entered the exhibit represented the transition from experiencing the color blue “in its material state to its immaterial state.”¹⁴⁰ International Klein Blue went from physical paint to fabric dye, to liquid, and then to the “metaphysical sensibility,” which completed the “progression of immaterialization.”¹⁴¹

Purchasing a Zone “was a work of performance art in itself.”¹⁴² In exchange for pure gold, Klein gave buyers an immaterial Zone and a paper receipt, out of a receipt book, as proof of the transaction, seen below.¹⁴³



¹³⁹ *Id.* at 16 (quoting Yves Klein).

¹⁴⁰ *Id.*

¹⁴¹ *Id.* at 18.

¹⁴² *Id.* at 7.

¹⁴³ *Id.* at 2, 7, 23 (citing Yves Klein, *Ritual for the Relinquishment of the Immaterial Pictorial Sensitivity Zones, 1957-1959*); *Receipt Book for the Zones of Immaterial Pictorial Sensibility. Series 5.*, YVESKLEIN.COM (1959),

[https://www.yvesklein.com/en/ressources/index?s\[\]=6&sb=_created&sd=desc&s\[\]=21#/en/ressources/view/artwork/16616/receipt-book-for-the-zones-of-immaterial-pictorial-sensibility-series-5?s\[\]=6&s\[\]=21&sb=_created&sd=desc](https://www.yvesklein.com/en/ressources/index?s[]=6&sb=_created&sd=desc&s[]=21#/en/ressources/view/artwork/16616/receipt-book-for-the-zones-of-immaterial-pictorial-sensibility-series-5?s[]=6&s[]=21&sb=_created&sd=desc); *Receipt to Jacques Kugel for transfert of a Zone of Immaterial Pictorial Sensibility. Series n°1, Zone n°02*, YVESKLEIN.COM (Dec. 7, 1959),

[https://www.yvesklein.com/en/ressources/index?s\[\]=6&sb=_created&sd=desc&s\[\]=21#/en/ressources/view/artwork/16617/receipt-to-jacques-kugel-for-transfert-of-a-zone-of-immaterial-pictorial-sensibility-series-n1-zone-n02?s\[\]=6&s\[\]=21&sb=_created&sd=desc](https://www.yvesklein.com/en/ressources/index?s[]=6&sb=_created&sd=desc&s[]=21#/en/ressources/view/artwork/16617/receipt-to-jacques-kugel-for-transfert-of-a-zone-of-immaterial-pictorial-sensibility-series-n1-zone-n02?s[]=6&s[]=21&sb=_created&sd=desc).

Klein offered 101 Zones for sale in eight series.¹⁴⁴ The first, Series 0, contained thirty-one receipts.¹⁴⁵ The following seven, Series 1-7, each had ten more receipts.¹⁴⁶ Series 1 Zones were priced at twenty grams of gold, worth about \$25 in 1958 and \$1,100 today.¹⁴⁷ Each subsequent series released doubled the price of the Zones offered for sale.¹⁴⁸ Klein clarified that the Zones are transferable and that he expected the Zones to be sold for no less than double the original price on the secondary market.¹⁴⁹

Once the gold was exchanged for the receipt, the buyer owned the Zone but did *not* own the “authentic immaterial value” of the artwork.¹⁵⁰ According to Klein, for the buyer to truly own the artwork, the sensibility of International Klein Blue had to become part of their spirit.¹⁵¹ To attain true immaterial ownership, Klein offered buyers the opportunity to engage in a ritual that took place on the Pont au Double bridge over the River Seine in Paris.¹⁵² The beginning of a ritual that occurred on February 10, 1962, transferring immaterial ownership to Michael Blankfort can be seen below.¹⁵³



To complete the ritual, the buyer would burn the receipt for their Zone.¹⁵⁴ In doing so, the buyer destroyed their material ownership of the Zone by destroying the evidence that they owned the Zone. Then, Klein would throw half of the gold the buyer had paid to purchase the

¹⁴⁴ Chan, *supra* note 69, at 24-25.

¹⁴⁵ *Id.*

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ *Id.* at 23, 31 (citing Yves Klein, *Ritual for the Relinquishment of the Immaterial Pictorial Sensitivity Zones*, 1957-1959).

¹⁵⁰ *Id.* at 7.

¹⁵¹ *Id.*

¹⁵² *Id.*

¹⁵³ *Transfer of a Zone of Immaterial Pictorial Sensibility to Michael Blankfort*, YVESKLEIN.COM (1962), [https://www.yvesklein.com/en/ressources/index?s\[\]=6&sb=_created&sd=desc&s\[\]=21#/en/ressources/view/photo/3575/transfer-of-a-zone-of-ssimmaterial-pictorial-sensibility-to-michael-blankfort?s\[\]=6&s\[\]=21&sb=_created&sd=desc](https://www.yvesklein.com/en/ressources/index?s[]=6&sb=_created&sd=desc&s[]=21#/en/ressources/view/photo/3575/transfer-of-a-zone-of-ssimmaterial-pictorial-sensibility-to-michael-blankfort?s[]=6&s[]=21&sb=_created&sd=desc).

¹⁵⁴ Chan, *supra* note 69, at 7.

Zone into the River Seine.¹⁵⁵ Simultaneous performance of these steps in the ritual transferring immaterial ownership to Dino Buzzati on January 26, 1962 can be seen below.¹⁵⁶



After the ritual was complete, the buyer truly owned the artwork and could not transfer the work further.¹⁵⁷ Klein performed this ritual at least three times with buyers.¹⁵⁸ Klein kept detailed notes on the rituals, exemplified by the image below of his notebook, showing the ritual transferring immaterial ownership to Michael Blankfort.¹⁵⁹

¹⁵⁵ *Id.* at 7-8.

¹⁵⁶ *Transfer of a Zone of Immaterial Pictorial Sensibility to Dino Buzzati. Series n°1, Zone 05.*, YVESKLEIN.COM (Jan. 26, 1962),

[https://www.yvesklein.com/en/ressources/index?s\[\]=6&sb=_created&sd=desc&s\[\]=21#/en/ressources/view/artwork/941/transfer-of-a-zone-of-ssimmaterial-pictorial-sensibility-to-dino-buzzati-series-n1-zone-05?s\[\]=6&s\[\]=21&sb=_created&sd=desc](https://www.yvesklein.com/en/ressources/index?s[]=6&sb=_created&sd=desc&s[]=21#/en/ressources/view/artwork/941/transfer-of-a-zone-of-ssimmaterial-pictorial-sensibility-to-dino-buzzati-series-n1-zone-05?s[]=6&s[]=21&sb=_created&sd=desc).

¹⁵⁷ Chan, *supra* note 69, at 7, 33.

¹⁵⁸ *Id.* at 8.

¹⁵⁹ *Transfer of a "Zone of Immaterial Pictorial Sensibility" to Michael Blankfort, Pont au Double, Paris*, YVESKLEIN.COM (Feb. 10, 1962),

[https://www.yvesklein.com/en/ressources/index?s\[\]=6&sb=_created&sd=desc&s\[\]=21#/en/ressources/view/artwork/640/transfer-of-a-zone-of-ssimmaterial-pictorial-sensibility-to-michael-blankfort-pont-au-double-paris?s\[\]=6&s\[\]=21&sb=_created&sd=desc](https://www.yvesklein.com/en/ressources/index?s[]=6&sb=_created&sd=desc&s[]=21#/en/ressources/view/artwork/640/transfer-of-a-zone-of-ssimmaterial-pictorial-sensibility-to-michael-blankfort-pont-au-double-paris?s[]=6&s[]=21&sb=_created&sd=desc).



Klein's ritual contemplated issues surrounding the conceptualization of ownership:

Klein distinguished between two related but fundamentally different types of ownership: the absolute ownership of the thing, and the legal ownership of the deed to the thing. In different terms, we could say he separated the ownership of spiritual use value and material exchange value. In Klein's project, it is impossible for a collector to have both.¹⁶⁰

Klein's ritual made the absolute ownership of artwork mutually exclusive from its legal ownership. Buyers could not own both the receipt that had value on the art market and the true sensibility of the artwork at the same time.

The traditional art community regards Klein's Zones project as "an important early example of conceptual art that challenged notions of materiality, ownership, and the rituals of exchange," and in the blockchain art community, it is considered the inception of the NFT.¹⁶¹ There are many similarities between Klein's Zones project and NFTs. He conceptualized an idea many decades before its time. The immaterial ownership that Klein's work sought to achieve embodies the form of NFTs as digital, rather than physical art. Klein's ritual has an equivalent function on the blockchain where users can "burn" tokens, deleting the code that comprises a token.¹⁶² Additionally, Klein's release of the project in series, starting with Series 0, is ahead of its time. NFT projects are often released in series starting at zero because computer code begins counting at zero instead of one. Klein's series established scarcity in an intangible object, enforced by Klein through the receipts he issued, just as NFTs establish scarcity in digital images through a smart contract. Also, the price schedule of doubling the price for each subsequent series release is a commonly used pricing mechanism for NFT

¹⁶⁰ Chan, *supra* note 69, at 3.

¹⁶¹ *Id.*

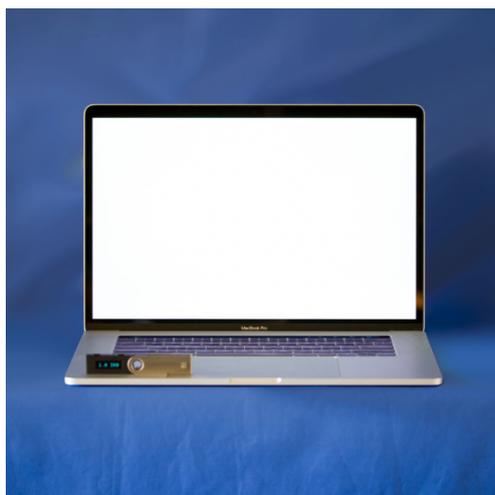
¹⁶² COINMARKETCAP, *Glossary, Burn/Burned* <https://coinmarketcap.com/alexandria/glossary/burned>.

projects, meant to reward those who support the project early. In numerous ways, Klein's project was extremely futuristic and is very similar to many NFT projects on Ethereum.

Yves Klein's Zones of Immaterial Pictorial Sensibility were recreated by an artist, Mitchell Chan, in an NFT project from 2017 called Digital Zones of Immaterial Pictorial Sensibility (Digital Zones).¹⁶³ Chan's Digital Zones project shows how blockchain technology can be used as a tool to improve certain aspects of traditional artworks and achieve artistic goals that are not possible in the traditional art market.

Chan sold Digital Zones as Ethereum tokens called IKBs, which stands for International Klein Blue. Chan's goal was "to create digital reproductions of Yves Klein artworks—specifically, empty digital spaces imbued with an immaterial artistic sensibility—that are then sold as a[] [non-fungible] token on the Ethereum blockchain."¹⁶⁴ Chan imbued the Digital Zones with the color blue seen on the northern coast of Prince Edward Island in Canada, on the Atlantic Ocean horizon on a clear day about three hours before twilight.¹⁶⁵

While the Zones and Digital Zones projects are very similar, Chan's Digital Zones project takes the immateriality that Klein strived for a step further. The Digital Zones exist in a digital space rather than a physical gallery like the Galerie Iris Clert.¹⁶⁶ The digital space is imbued with the pictorial sensibility like Klein's exhibit.¹⁶⁷ The project was originally presented on a website with a blank screen, seen below.¹⁶⁸



The blank screen scrolls down for 101 screen lengths, representing the 101 Digital Zones, just as there were 101 Zones.¹⁶⁹

Chan's Digital Zones can only be purchased using Ethereum's token, Ether, which is digital.¹⁷⁰ Using Ether to pay for Digital Zones further immaterializes the project beyond what

¹⁶³ Chan, *supra* note 69, at 3.

¹⁶⁴ *Id.* at cover page.

¹⁶⁵ *Id.* at 19.

¹⁶⁶ *Id.*

¹⁶⁷ *Id.*

¹⁶⁸ Mitchell F. Chan, *Presentation of the Digital Zones of Immaterial Pictorial Sensibility, with hardware wallet*, DIGITAL ZONES OF IMMATERIAL PICTORIAL SENSIBILITY BLUEPAPER (2017), <https://ipfs.io/ipfs/QmcdKPjcJgYX2k7weqZLoKjHqB9tWxEV5oKBcPV6L8b5dD>.

¹⁶⁹ Chan, *supra* note 69, at 20.

¹⁷⁰ *Id.* at 26, 29.

Klein accomplished with his Zones project. The pricing mechanism for the Digital Zones recreates Klein's gold pricing system with Ether.¹⁷¹ Just like Klein released Zones in series, Chan released eight series of Digital Zones, with thirty-one Digital Zones in the first series, and ten more Digital Zones in each subsequent series.¹⁷² He sold the first series of IKBs for 0.1 ETH which was worth about \$30 in 2017 and \$120 today.¹⁷³ Following Klein's example, Chan expects IKBs to be sold on the secondary market at no less than double their original purchase price.¹⁷⁴

The transfer of a Digital Zone to a buyer is openly documented on the Ethereum blockchain rather than with a receipt like Klein used.¹⁷⁵ The transaction is digital and has no physical, material aspect. However, Chan included an image of a receipt that is associated with each IKB NFT, seen below.¹⁷⁶



Chan also recreated Klein's ritual in the Digital Zones project. The IKB smart contract enables a buyer of a Digital Zone to call a function that performs the ritual to become a true immaterial owner of the IKB.¹⁷⁷ When the ritual function is called, the IKB is burned and half of the ETH the buyer used to buy the IKB is given to a miner of the block on which the ritual is called.¹⁷⁸ However, because of the perfect provenance on the blockchain, the true immaterial owner of the burned IKB can prove they own it because the blockchain ledger records when the burning function is called. Chan's ritual is performed entirely online and without Chan's presence, although he offers to meet buyers in person to perform the ritual near a body of water.¹⁷⁹ Chan recreates the mutually exclusive ownership dilemma that Klein's ritual established, illustrating that market or legal ownership is transferable but true immaterial ownership is not.

By using the Ethereum blockchain for his project, Chan more closely achieved the immateriality that Klein desired. For example, Klein wanted buyers to be able to buy Zones from him anonymously, but that could not be easily accomplished before the existence of

¹⁷¹ *Id.*

¹⁷² *Id.* at 28.

¹⁷³ *Id.* at 29.

¹⁷⁴ *Id.*

¹⁷⁵ *Id.* at 26-27.

¹⁷⁶ *Id.*; Mitchell F. Chan (@mitchellfchan), *IKB Cachet de Garantie*, Twitter (Apr. 28, 2021, 10:59 AM), <https://twitter.com/mitchellfchan/status/1387421212960305154?lang=en>.

¹⁷⁷ Chan, *supra* note 69, at 29-30.

¹⁷⁸ *Id.* at 30 (Chan burned a Series 0 Digital Zone).

¹⁷⁹ *Id.*

blockchain technology.¹⁸⁰ Digital Zones are always purchased anonymously since blockchains have inherently anonymous users. Furthermore, Ethereum transfers Digital Zones efficiently because users can make and accept offers, payments, and transfers online. For every subsequent sale from an owner to a buyer on the secondary market, Chan receives 10% of the sale price.¹⁸¹ Chan uses the blockchain as an enforcement mechanism to collect a royalty fee that continually rewards him as the value of his work increases over time. The Digital Zones project also improves on the Zones project because Chan's smart contract forever limits the number of IKB NFTs to 101 pieces that cannot be forged.¹⁸² The Digital Zones project illustrates the numerous ways that NFTs improve the art market through immateriality, pristine provenance records and transfer efficiencies.

CONCLUSION

There are many problems in the traditional art market. IP law attempts to address some of these problems such as ownership and transfer issues. However, blockchain technology can solve more art market problems by using digital assets, with transparent information, that can be efficiently transferred between market participants. NFTs empower artists and individual owners, revolutionizing the current art market system.¹⁸³ Individuals can use NFTs to invest in young artists in return for a piece of their future earnings. Artists can sell NFTs directly to their fans and generate recurring revenue by setting up subscription models or collecting royalty fees on secondary sales without ceding undue amounts of power, ownership rights, or fees to a middleman.¹⁸⁴ NFTs revolutionize the art market and they can revolutionize other ownership systems in society, as well.¹⁸⁵

¹⁸⁰ *Id.*

¹⁸¹ *Id.*

¹⁸² *Id.* at 26.

¹⁸³ McBride, *supra* note 76, at 100-101.

¹⁸⁴ *Id.* at 105.

¹⁸⁵ *See id.* at 19 (suggesting that NFTs will overhaul the current music industry).