

NFTS AND COPYRIGHT: LEGAL CHALLENGES IN VIRTUAL ASSETS

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Abstract:

Non-fungible tokens (NFTs) have rapidly transformed the market for digital creativity by creating a novel mechanism for assigning and transferring scarce digital property rights. But NFTs were born on blockchains, not in copyright law textbooks. The result is a persistent and growing mismatch between what an NFT conveys on-chain (a token and metadata pointing to media) and what copyright law governs (exclusive rights in creative works). This article examines the legal challenges that arise at that intersection: ownership vs. copyright, infringement and enforcement, marketplace and platform liability, smart contracts and licensing, moral rights and attribution, cross-jurisdictional enforcement, evidence and remedies, and policy options. It offers practical recommendations for creators, buyers, platforms, and lawmakers to reduce friction and protect both market innovation and authors' legal rights.

1. Introduction:

NFTs – cryptographic tokens that are uniquely identifiable, non-interchangeable, and typically linked to a digital file or metadata – exploded into the mainstream in 2021 and have since become a popular way to buy, sell, and trade digital art, collectibles, virtual real-estate, and other intangible goods. An NFT normally points (on-chain) to metadata and may include a link to an image, audio file, video, or other creative work that lives off-chain (on a web server or decentralized storage). The purchaser receives the token (and the public record on the blockchain of that transfer), but in most market transactions the copyright in the underlying work remains with the creator unless explicitly transferred by contract.

That conceptual gap – token ownership ≠ copyright ownership – is the core source of legal disputes. Courts, regulators, and scholarly commentators are working to fit the new facts of tokenized art into existing copyright doctrines, contract law, consumer protection rules, and securities/regulatory frameworks. Government agencies and experts have generally concluded

that existing intellectual property (IP) rules are capable of handling many NFT problems, but they have also flagged important areas where law, practice, and technology diverge and where clarifying guidance or tailored regulation may be useful. For example, the U.S. Patent and Trademark Office and Copyright Office published a joint report in 2024 observing that current IP laws can address many NFT-related issues but that stakeholders expressed concerns about enforcement and marketplace practices. ([U.S. Copyright Office](#))

This article maps the key legal problems, illustrates them with case law and regulatory developments, and proposes best practices and policy responses.

2. Primer: what an NFT is – and what it is not

To evaluate the legal issues, we must be precise about the discrete legal assets at play.

1. **The token (on-chain).** The NFT itself is a record on a distributed ledger that identifies an owner (a wallet address) and metadata describing the asset. The token is proof of control over that token ID on a particular chain. The token may

be accompanied by smart contract code (for example, ERC-721 or ERC-1155 on Ethereum) that can enforce royalty payments or define transfer rules.

2. **The underlying digital file or work (off-chain).** Most NFTs are “linked” to a file (image, gif, 3D model, audio), usually hosted off-chain (e.g., on IPFS, a web server, or a CDN). The NFT can also embed a copy or derivative in its metadata.
3. **Licenses and contractual terms.** NFT platforms and creators often attach license terms to the sale (via the smart contract, marketplace terms, or a separate written contract) specifying what the NFT buyer can do (display, resell, create derivatives, commercialize). Those contractual terms are central to determining rights but vary widely across platforms.
4. **Copyright (and other IP rights).** Copyright is a bundle of exclusive rights in the creative expression (reproduce, prepare derivative works, distribute, publicly display, perform, etc.). Unless expressly transferred via assignment or an exclusive license, those rights usually remain with the creator.

So: buying an NFT is usually buying a token and whatever license or promises accompany it, not an automatic transfer of copyright.

3. The mismatch: token ownership ≠ copyright ownership:

A frequent source of consumer confusion – and litigation – is the mistaken belief that owning an NFT equals owning the copyright in the underlying work. Several factors drive this confusion:

- Marketplace presentations often emphasize “ownership” language.
- Buyers see a high price and assume they have comprehensive rights.

- Smart contracts and pictures of certificates reinforce tangible conventional metaphors.

From a legal standpoint, courts look to the *substance* of the transaction, not the metaphor. If the contract (written or incorporated by reference) transfers copyright or grants exclusive exploitation rights, then the buyer may have copyright ownership. Absent that, the buyer has the token and whatever limited license the seller provided. Scholars have documented that market practice is inconsistent: some projects transfer broad commercial rights, some transfer only the right to display, and many provide unclear or contradictory terms – producing significant legal risk for both buyers and creators. ([Georgia Law Review](#))

Practical consequence: sellers who want to transfer copyright should do so explicitly (written assignment meeting statutory formalities where required), and buyers should insist on clear written representations and warranties.

4. Infringement risk: who can be sued and for what?

There are several types of infringement actors and actions to consider in the NFT context.

4.1 Primary infringement by the minter/creator

Where an NFT mints and sells a token linked to a copyrighted work that the minter does not own or have a license to use, the minter is primarily liable for reproduction/distribution/display infringement (subject to defenses like fair use). Classic examples include minting someone else’s artwork without permission or creating tokens tied to film clips or music where the creator lacks rights.

4.2 Secondary liability for marketplaces and platforms

Marketplaces (e.g., OpenSea, Rarible) facilitate minting and trading. Governments and rights holders have asked whether marketplaces incur contributory or vicarious liability for user

infringement. The standard tests – knowledge and material contribution (for contributory liability) or the right and ability to control coupled with a direct financial interest (for vicarious liability) – have been applied variably to online intermediaries. Regulators and courts are investigating whether marketplaces' moderation mechanisms, take-down policies, and design choices make them more or less likely to be held liable. In other digital contexts, platforms have sometimes faced enforcement actions; regulators have signaled attention to NFTs as potential vehicles for securities or consumer protection issues as well. (lawoftheledger.com)

4.3 Claims against subsequent buyers and owners

Copyright owners can sue downstream purchasers who continue to infringe (e.g., by publicly displaying an unlicensed work or creating unlicensed derivatives), though often the seller and marketplace are more practical targets.

4.4 Automated infringement by AI and generative tools

Where NFTs are generated by AI trained on copyrighted inputs without authorization, creators and platforms risk novel infringement claims. The litigation landscape for AI training and image generation (such as high-profile cases concerning dataset use) has direct implications for NFTs as AI-generated art is tokenized and sold. Recent settlements and trials concerning AI training on copyrighted materials illustrate heightened enforcement by rights holders. ([AP News](http://APNews))

5. Licensing, smart contracts, and the “code as law” problem

NFT marketplaces differ on how licenses are delivered:

- **On-chain licenses:** the smart contract may include or point to license text. Smart contracts are immutable on-chain, which can be helpful for transparency but poses problems if the

license needs to change or contains ambiguous legal language not suited to code.

- **Off-chain licenses/marketplace terms:** many projects rely on platform terms or linked URLs. These links may break, be edited, or lead to ambiguous text. Off-chain licenses face challenges in proving the license existed at the time of sale and in determining governing law.

Smart contracts and ambiguity. Code can automate royalty payments (e.g., 10% on secondary sales) and enforce transfer restrictions, but smart contracts are ill-suited for the nuanced, interpretive questions typical of copyright law (e.g., whether a particular reuse is a derivative work or fair use). Moreover, the immutable nature of code can lock in problematic terms and offers limited ability to remedy mistaken or fraudulent sales.

Recommendation: hybrid approach – use on-chain pointers to robust, versioned off-chain contracts (with clear timestamps and hash commitments to the precise license text) and include plain-language summaries to reduce buyer confusion.

6. Common litigation themes and notable disputes:

While the NFT litigation record is still developing, several recurring themes and notable cases illustrate the core problems.

6.1 Unauthorized minting of third-party works

Creators frequently report bad actors minting tokens tied to photographs, artworks, or brand assets without authorization. Rights holders have sought takedowns and damages. Marketplaces' responses vary; faster, transparent takedown processes and effective identity/verifications reduce harm.

6.2 Ownership and attribution disputes

Cases arise where the identity of the original creator is disputed (eg., anonymous creators later revealed to have copied work). Attribution disputes can implicate moral rights (depending

on jurisdiction) and consumer protection claims when buyers claim they were misled about provenance.

6.3 AI and dataset disputes spilling into NFTs

Lawsuits against AI companies for using copyrighted images to train models have broader implications when AI-generated images are minted as NFTs. Getty Images' large suit against an AI company (and related litigation in 2025) highlights the environment in which copyright owners are aggressively protecting image rights; this pressure will inevitably affect NFTs minted from generative models. ([Reuters](#))

6.4 Marketplace regulatory actions

Securities regulators and consumer protection agencies are experimenting with enforcement in the crypto space, including NFTs. Regulatory scrutiny of certain NFT projects as potential securities or frauds has increased, and marketplaces have received Wells notices and enforcement attention in some jurisdictions. ([CoinDesk](#))

7. Evidentiary and enforcement challenges on blockchains:

Blockchains are touted as immutable proof of provenance and transaction history, but they create mixed evidentiary questions.

7.1 On-chain certainty vs. off-chain reality

An on-chain token proves a transfer of that token, but not necessarily the legal right to the underlying content. Evidence that a seller had authorization to mint the work typically exists off-chain (emails, contracts, licenses) and may be difficult to locate if parties are anonymous or located in different jurisdictions.

7.2 Anonymity and jurisdiction

Because wallet addresses are pseudonymous and users often operate across borders, identifying defendants and establishing personal jurisdiction can be time-consuming and expensive. Subpoenaing blockchain

analytics providers and cooperating with exchanges/marketplaces may be required.

7.3 Chain forks and permanence

Blockchains can be forked, and off-chain links may rot. A marketplace that retains metadata off-chain could see links disappear. Courts may have to reconcile a token's enduring transaction record with a transient off-chain asset.

Best practice for evidence: creators should keep hashes/timestamps of original works, notarizations, and signed licenses; buyers should archive the exact license and metadata at purchase time (a cryptographic hash can prove the precise text referenced).

8. Moral rights, attribution, and cultural concerns:

Moral rights – the right of attribution and the integrity of the work – are strong in some jurisdictions (e.g., many civil law countries) and weaker in others (e.g., U.S. law has limited moral rights for visual artists under VARA). NFTs raise special concerns:

- **Attribution:** fraudulent or incorrect attribution on marketplaces harms artists' reputations and may violate moral rights when jurisdictions protect them.
- **Integrity:** tokenization may enable unrestricted modification or derivative creation; where moral rights protect the integrity of the work, creators may have legal claims against users who create derogatory modifications.
- **Cultural patrimony:** tokenization of indigenous or culturally sensitive artworks raises ethical (and sometimes legal) questions around consent and exploitation.

Policymakers and marketplaces can help by supporting provenance standards, artist verification, and prompt remediation for misattributed works.

9. Royalties, resale rights, and enforcement:

One of the novel market features associated with NFTs is programmable resale royalties (automatic payments to creators when a token is resold). Smart contracts can technically enforce royalties on-chain, but there are practical and legal limits.

- **Protocol-level enforcement vs. marketplace behavior:** royalties enforced at smart contract level depend on marketplace adherence. A marketplace can be designed to respect royalty payments, but if a marketplace chooses not to honor the contract's royalty logic (or if trades move to off-chain settlement channels), creators may not receive payments.
- **Legal enforcement of royalties:** resale rights for visual artists (*droit de suite*) exist in some jurisdictions (e.g., EU) but not uniformly. Where resale rights exist, creators may have regulatory paths to collect royalties; where they do not, blockchain enforcement depends on marketplace cooperation and commercial incentives.

A mixed system of legal resale rights plus smart contract enforcement (and marketplace compliance) provides the most durable protection for artists' economic interests.

10. Consumer protection, misrepresentation, and market manipulation:

NFTs have attracted attention from consumer protection authorities because of misrepresentation (false provenance), wash trading (artificially inflating sales volumes), and high volatility. Consumer protection laws can address false advertising, defective products, and fraud – and have been invoked in some crypto/NFT cases.

Transparency obligations, required disclosures (about linked content, license scope, royalties), and standardized metadata can reduce consumer harm and litigation risk. Marketplaces should disclose whether an NFT is a minted

original, a derivative, or a reproduction; whether the sale transfers copyright; and the precise license terms.

11. Comparative jurisdictional approaches:

Different legal systems approach NFTs and IP differently.

- **United States.** U.S. copyright law is robust but requires statutory formalities to enforce some remedies (registration for U.S. works before suing for statutory damages in many cases). U.S. agencies (like USPTO and Copyright Office) produced guidance noting that existing laws address many issues but recommending caution before NFT-specific legislation. ([U.S. Copyright Office](#))
- **European Union.** EU moral rights, resale rights, and stronger consumer protections may offer more avenues for artists, particularly under the EU's resale right frameworks and DSA (Digital Services Act) obligations on platforms. The approach to AI training data and image rights in Europe has been active, with rights holders pursuing claims over unauthorized uses.
- **United Kingdom.** The UK courts have been active in copyright/AI litigation and are an important forum for cross-border claims (e.g., Getty Images litigation in London). The UK's case law may influence global norms for image/data use. ([Reuters](#))
- **Developing jurisdictions.** Many emerging markets lack clear NFT rules, producing unpredictability. Cross-border enforcement remains the central challenge.

12. Interaction with securities and financial regulation:

Some NFTs, especially when bundled with profit-sharing promises, fractionalized, or sold with promises of return, attract securities law

analysis. Regulators (such as the SEC in the U.S.) have signaled increased scrutiny of projects that may behave like unregistered securities or investment contracts. Whether an NFT is a security will depend on the specific facts – marketing, profit expectation, and contractual rights – assessed under existing securities tests. Regulators have already pursued some NFT projects and marketplaces; practitioners must be mindful of potential securities, commodities, and AML/KYC consequences. (lawoftheledger.com)

13. Remedies and practical enforcement strategies:

Given the unique challenges, rights holders and market participants should consider a layered enforcement strategy:

1. **Preventive measures.** Strong onboarding/verification for creators, proactive rights clearances, and versioned license documents reduce downstream disputes.
2. **Marketplace cooperation.** Establish and require DMCA-style (or jurisdictional equivalent) takedown and counter-notice procedures, expedited dispute resolution, and provenance verification.
3. **Use technical evidence.** Preserve cryptographic hashes, timestamps, and transaction records when bringing claims; work with blockchain analytics firms and exchanges to trace funds and identities.
4. **Targeting operators.** When an anonymous minter is hard to locate, pursue marketplaces, custodial platforms, and fiat ramps for relief (injunctive relief, account freezes).
5. **Alternative dispute resolution.** Given cross-border friction, arbitration clauses with specific expert panels on blockchain/IP issues may speed resolution, though enforceability depends on jurisdictions.

6. **Public reputation remedies.** Social and reputational sanctions in closely knit collector communities can be powerful.

14. Policy and reform options:

Policymakers face a choice between (1) leaving core IP rules intact and adapting enforcement mechanisms to the blockchain era, or (2) drafting NFT-specific legislation addressing licensing, provenance, royalties, and platform duties. Some guiding principles:

- **Clarity over novelty.** Where possible, apply existing IP and consumer protection laws and encourage clear contracts rather than inventing new rights that risk fragmentation.
- **Transparency standards.** Require marketplaces to disclose license scope, whether copyright is transferred, and provenance metadata (with cryptographic proof such as content hashes).
- **Platform obligations.** Consider baseline obligations for large marketplaces: implement notice-and-takedown, verification procedures, and consumer safeguards (mirroring analogues in digital platform laws).
- **Support creators' rights.** Explore mechanisms that help creators collect resale royalties where appropriate (and harmonize cross-border collection).
- **Address AI overlap.** As generative AI and NFTs overlap, harmonized rules about dataset acquisition and fair use defenses will reduce litigation uncertainty (recent high-profile AI copyright litigation underscores this point). ([AP News](https://www.apnews.com))

The USPTO/Copyright Office 2024 joint report advocated caution about NFT-specific legislation and emphasized that IP fundamentals can address many concerns while recommending stakeholder engagement and voluntary standards. (U.S. Copyright Office)

15. Practical drafting recommendations for market actors:

For creators:

- Provide a clear written license or assignment at the time of minting; consider including the license text as a hashed off-chain document with the hash embedded in the token metadata.
- State expressly what rights are retained and what rights are transferred – reproduction, derivatives, commercial exploitation, sublicensing, territorial scope, duration.
- Include representations and warranties about originality and non-infringement, and indemnities when appropriate.

For buyers/collectors:

- Do not assume copyright transfers. Inspect the exact license text and archive it. Ask whether the seller has the right to mint and transfer the work.
- Verify provenance and prefer marketplaces that publish immutable provenance data and offer seller verification.

For marketplaces/platforms:

- Publish standardized license templates (with optional customizations) and require the seller to select one at minting.
- Implement proactive content-moderation and rapid takedown procedures, and publish transparency reports on enforcement.
- Provide clear UI/UX explanations to buyers: token = token; copyright = separate.

For lawyers and advisors:

- Use a standardized checklist for NFT deals covering copyright, licensing, moral rights, tax consequences, anti-

money laundering, securities law risk, and data protection.

16. Future directions and open questions:

Several open questions will shape the next phase of NFTs and copyright law:

1. **How will courts treat smart contracts in resolving ambiguous rights?** Will courts find that code constitutes a binding license, or will traditional contract law insist on clear legal prose?
2. **How will AI litigation feed into NFT disputes?** If an AI model generated an image used for an NFT and the training datasets included copyrighted images, will creators, marketplaces, or users be liable?
3. **Can decentralized marketplaces design governance structures to reduce liability while protecting creators?** Decentralized autonomous organizations (DAOs) complicate the usual “operator” concept.
4. **Will there be international cooperation on royalties and provenance standards?** Cross-border coordination would make enforcement and collection of resale rights more efficient.

Ongoing litigation and regulatory actions – including high-profile IP cases concerning AI and image rights, and enforcement actions by securities regulators – suggest the legal landscape will remain dynamic. Recent high-stakes litigation around generative AI and copyrighted images underscores that rights holders are prepared to litigate vigorously to protect economic and reputational interests. ([Reuters](#))

17. Conclusion: bridging markets and law

NFTs present both an opportunity and a challenge. They offer creators new monetization, collectors novel forms of scarcity, and platforms programmable ways to encode economic participation. But the technology does not change the fundamentals of copyright

law: exclusive rights belong to the author until lawfully transferred. The mismatch between market messaging and legal reality creates litigation risk, consumer harm, and reputational damage.

Pragmatic solutions – clearer licenses, better marketplace practices, archival standards for license texts and hashes, and carefully targeted regulatory obligations – can reconcile the efficiency of tokenized markets with the protections copyright law seeks to provide. At the same time, ongoing litigation (including landmark disputes involving AI training datasets and image rights) and regulatory scrutiny will refine the contours of responsibility and help create norms for the next generation of virtual assets.

Selected references and recommended reading:

1. Joint U.S. Patent and Trademark Office – U.S. Copyright Office, *Report on NFTs and Intellectual Property* (Mar. 12, 2024). Key finding: many stakeholders believe current IP laws can address NFT concerns but that clear market practices and standards are needed. ([U.S. Copyright Office](#))
2. Georgia Law Review, *The Art of NFTs: Copyright, Contracts, and the Marketplace* (2025) – scholarly analysis of how NFTs fit within existing legal frameworks. ([Georgia Law Review](#))
3. Reuters & legal reporting on Getty Images v. Stability AI (London High Court) – a signal case on image rights and dataset use that has implications for AI-generated NFTs and training data controversies. ([Reuters](#))
4. Recent major settlements and legal pressure on AI companies for unauthorized use of copyrighted books and images – an ecosystem trend that will affect NFTs containing AI-generated content. ([AP News](#))

5. Analysis of regulatory enforcement trends regarding NFTs and whether certain projects may implicate securities laws or consumer protection regulations. (lawoftheledger.com)

Appendix – Checklist for an NFT transaction (quick reference)

For sellers/creators:

- Do I own the copyright or have a license to mint and sell? Document proof.
- Have I prepared a clear, versioned license or assignment? Include hash in metadata.
- Have I disclosed royalties, secondary sale rules, and whether copyright transfers?
- Have I provided representations and warranties about originality?

For buyers:

- Exactly what rights am I buying? Commercial use? Derivatives? Display?
- Is the license embedded, timestamped, and archived? (Store the hash.)
- Does the marketplace perform creator verification and provenance checks?

For marketplaces/platforms:

- Are license options standardized and mandatory selection required at mint?
- Are takedown, counter-notice, and dispute resolution processes robust?
- Are royalty mechanics transparent? Does the marketplace honor smart contract royalties?