

Non-Fungible Tokens (NFTS) And the Challenge of Legal Status: A Comparative Analysis of Dispute Resolution Mechanisms

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Abstract: The emergence of Non-Fungible Tokens (NFTs) as a novel digital asset class has precipitated significant legal uncertainty across multiple jurisdictions. Unlike fungible cryptocurrencies, NFTs encode uniqueness and provenance on distributed ledger technology, yet existing legal frameworks — conceived for tangible property, intellectual creations, and financial instruments — have proven inadequate in determining their precise legal character. This article engages in a rigorous comparative legal analysis of the legal status of NFTs in Uzbekistan, the European Union, and the United States of America, examining how each jurisdiction has — or has failed to — accommodate NFTs within property law, intellectual property law, securities regulation, and consumer protection frameworks. A central concern of the article is the application of alternative dispute resolution (ADR) mechanisms — including arbitration, mediation, and online dispute resolution (ODR) — to NFT-related conflicts. The article identifies critical lacunae in domestic and international legal frameworks and proposes concrete legislative reforms tailored to the Uzbek legal context, while drawing on best practices from comparator jurisdictions. The study concludes that regulatory clarity, combined with adaptable ADR infrastructure, is essential to foster a secure and equitable digital economy in the Republic of Uzbekistan and beyond.

Keywords: Non-Fungible Tokens (NFTs); legal status; alternative dispute resolution; blockchain regulation; Uzbekistan; comparative law; digital assets; smart contracts; intellectual property; online dispute resolution.

Introduction: The rapid proliferation of blockchain-based digital assets has fundamentally disrupted conventional legal paradigms. Among the most legally ambiguous categories of such assets are Non-Fungible Tokens, or NFTs — cryptographic tokens representing unique ownership claims encoded immutably on a distributed ledger. Unlike Bitcoin or Ether, which are fungible (each unit interchangeable with another), NFTs derive their commercial significance precisely from their non-fungibility: the capacity of each token to represent a singular, identifiable item, be it a digital artwork, a musical recording, a virtual parcel of land, a sports collectable, or an in-game asset.

The Republic of Uzbekistan presents a particularly instructive case study. As a jurisdiction actively pursuing digital transformation, Uzbekistan has made demonstrable legislative efforts to engage with digital

assets. Nevertheless, no statute or regulatory instrument in Uzbekistan currently defines the legal status of NFTs with specificity. Regulations issued by the National Agency for Perspective Projects (NAPP) address cryptocurrencies and digital asset exchanges, but NFTs — as a distinct sub-category — remain unaddressed. This gap creates legal uncertainty for Uzbek citizens who purchase, create, and trade NFTs, as well as for the arbitral bodies and courts tasked with resolving the disputes that inevitably arise from such transactions.

This article proceeds as follows:

the theoretical and conceptual framework, defining NFTs, smart contracts, and the relevant legal doctrines;

The main comparative legal analysis, examining the legal status of NFTs in Uzbekistan, the EU, and the United States respectively, before addressing ADR

mechanisms across these jurisdictions;

The findings in light of existing scholarship and identifies areas requiring reform.

An NFT is, in its most fundamental technical sense, a cryptographic token recorded on a blockchain that certifies the uniqueness and ownership of a digital (or, increasingly, physical) asset. The ERC-721 standard, introduced on the Ethereum blockchain in 2018 by William Entriken, Dieter Shirley, Jacob Evans, and Nastassia Sachs, provided the first widely adopted technical specification for non-fungible tokens, establishing protocols for tracking ownership, enabling transfers, and storing metadata. Subsequent standards — including ERC-1155 (semi-fungible tokens) and Solana-based standards — have expanded the technical ecosystem. From a legal standpoint, however, what matters is not the technical architecture per se but the rights and obligations that an NFT may generate and the legal character that the law assigns to it.

Professor Primavera De Filippi of the CNRS and Harvard Berkman Klein Center, one of the foremost scholars of blockchain law, has argued that NFTs create "a new layer of property rights on the internet," but that such rights remain legally precarious unless anchored to a robust legal framework recognising them as property interests enforceable against third parties. This observation is fundamental: the mere existence of a token on a blockchain does not, *ipso jure*, constitute a recognised property right under any legal system. Law must intervene to give the token legal character.

A critical distinction, frequently overlooked in popular discourse, must be drawn between the NFT itself, the token and the underlying asset to which it points. When a collector purchases an NFT representing a digital artwork, they acquire the token, not necessarily the copyright in the artwork, nor an exclusive licence to reproduce or display it, unless such rights are explicitly conveyed by the smart contract or an accompanying off-chain agreement. As Professor Andres Guadamuz of the University of Sussex has observed, "the NFT is not the art; it is a receipt pointing to the art," with the result that the purchaser's legal entitlements depend entirely on what the smart contract — and any applicable law — says about the transaction.

NFTs are created, transferred, and often governed by smart contracts — self-executing code deployed on a blockchain that automatically performs pre-programmed operations when specified conditions are met. The Ethereum co-founder Vitalik Buterin initially described smart contracts as capable of carrying out the terms of a contract without human intermediation. However, the legal community has engaged in sustained debate about whether smart contracts

constitute contracts in the legal sense, or merely automated execution mechanisms that may or may not accompany a legally binding agreement.

Professor Aaron Wright and Primavera De Filippi coined the term "Lex Cryptographia" to describe a regime in which rules encoded in software — including smart contracts — substitute for, or operate alongside, conventional legal norms. While provocative, this framework raises fundamental questions about the relationship between technological self-enforcement and the rule of law: when code executes automatically and irreversibly, how does the aggrieved party obtain redress?

Under general principles of contract law — applicable in Uzbekistan under the Civil Code of the Republic of Uzbekistan, in the EU under national civil codes interpreted through the prism of Union law, and in the United States under the Uniform Commercial Code and common law — a contract requires offer, acceptance, consideration (in common law systems) or *causa*, and legal capacity of the parties. A smart contract may satisfy these requirements in certain circumstances, but it may also fail to do so, particularly where the parties did not consciously consent to its terms, where one party lacked legal capacity, or where the automated execution produced a result that contradicts the expressed intentions of the parties.

Intellectual property law is implicated because most commercially significant NFTs represent creative works — artworks, music, videos — that are protected by copyright. The relationship between NFT ownership and copyright ownership is one of the most litigated and contested issues in contemporary IP scholarship. Professor Jane Ginsburg of Columbia Law School has noted that digital tokenisation does not automatically convey copyright, and that the absence of explicit contractual provisions addressing copyright creates substantial risk for NFT purchasers.

Uzbekistan has emerged as one of the more proactive Central Asian jurisdictions in regulating digital assets. Resolution on measures to develop the digital economy and the sphere of crypto-assets turnover in the Republic of Uzbekistan (Resolution of the President of the Republic of Uzbekistan, of 03.07.2018 r. № RP-3832) — adopted in 2018 — represented a significant legislative step. This established a licensing regime for digital asset exchanges operating within Uzbekistan and conferred jurisdiction over regulatory matters on the National Agency for Perspective Projects

However, this Resolution reveals a significant and legally consequential gap: the statute does not define, classify, or address NFTs as a distinct legal category. A digital exchange platform listed under the normative

acts is authorised to facilitate the conversion of crypto-assets into fiat currency; it is less clear whether it is authorised — or required — to facilitate NFT trading, and what compliance obligations attach to such activity.

To illustrate the practical implications of this gap, consider the following scenario: A Tashkent-based digital artist (hereinafter, "the Artist") creates a series of ten digital paintings and mints them as NFTs on the Ethereum blockchain, selling them through an international NFT marketplace (such as OpenSea or Blur) to buyers located in Germany, the United States, and Kazakhstan. Subsequently, one buyer claims that the artwork was plagiarised from an existing painting protected by copyright, and demands a refund and damages. Another buyer has been unable to access the NFT because the metadata stored on a centralised server has become inaccessible — a phenomenon colloquially known as "link rot." A third buyer claims to have been induced to purchase by fraudulent representations about the rarity and market value of the token.

Uzbekistan's Civil Code does not explicitly recognise digital assets as a species of property. Property in Uzbek law is defined (the Civil Code) as encompassing things, money, securities, and other property rights. The phrase "other property rights" potentially provides a basis for including NFTs within the concept of property, but no court decision has confirmed this interpretation, and the absence of an explicit statutory provision creates legal uncertainty for creditors, liquidators, and courts seeking to enforce judgments against NFT holders.

The European Union has, as of December 2024, the most comprehensive dedicated regulatory framework for crypto-assets of any major jurisdiction, through the Markets in Crypto-Assets Regulation (MiCAR), Regulation (EU) 2023/1114 of 31 May 2023. MiCAR is a landmark instrument in global digital asset regulation, establishing uniform rules for the issuance, offering, admission to trading, and supervision of crypto-assets, and creating specific regimes for asset-referenced tokens, electronic money tokens, and "other crypto-assets." Understanding MiCAR's treatment of NFTs is essential to the comparative analysis.

The United States has not enacted a comprehensive federal statute specifically governing NFTs. Instead, NFT regulation has emerged through a patchwork of existing regulatory frameworks, enforcement actions by federal agencies, and evolving state and federal case law. This fragmented approach has generated significant uncertainty while also producing some of the world's most developed jurisprudence on digital

asset issues.

Professor Hilary Allen of American University Washington College of Law, a leading scholar of financial regulation and digital assets, has argued that regulators' attempts to fit NFTs and other crypto-assets into pre-existing regulatory categories reflect a category error: these instruments are sufficiently novel that existing frameworks, designed for securities markets of the twentieth century, cannot adequately govern them without significant distortion. Allen's critique has resonance beyond the United States: it applies equally to the Uzbek and European contexts, where the instinct to classify rather than legislate *de novo* may produce inadequate regulatory outcomes.

In the area of contract law, the key question is the enforceability of smart contracts. The Electronic Signatures in Global and National Commerce Act (E-Sign Act), 15 U.S.C. §§ 7001–7031, and the Uniform Electronic Transactions Act (UETA), adopted by 49 states, establish that electronic contracts and signatures have the same legal effect as paper ones. These statutes provide a basis for enforcing smart contracts as contracts, provided the other requirements of contract formation (offer, acceptance, consideration, mutual assent) are satisfied. However, the automatic, irreversible execution of smart contract code presents difficulties: if a smart contract executes in a manner inconsistent with the parties' actual intentions — due to a bug, a hack, or an ambiguity in the code — there is no straightforward mechanism for rescission or rectification, because the blockchain transaction is immutable.

Given the cross-border, pseudonymous, and technically complex nature of NFT disputes, ADR mechanisms — particularly arbitration and online dispute resolution (ODR) — are widely regarded as more appropriate vehicles for resolving such disputes than conventional litigation. However, the application of ADR to NFT disputes raises its own legal questions concerning the validity of arbitration clauses in smart contracts, the applicable rules of procedure, and the enforceability of awards.

Arbitration is the most formally developed ADR mechanism for cross-border commercial disputes. Under the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards (1958), to which Uzbekistan acceded in 1996, arbitral awards are enforceable in 172 signatory states, provided they were made pursuant to a valid arbitration agreement and in compliance with due process. The threshold question in NFT arbitration is whether a smart contract can constitute a valid arbitration agreement — specifically, whether the click-through terms of service of an NFT

marketplace bind users in accordance with the formal requirements of the New York Convention and domestic arbitration law.

Mediation represents an alternative to arbitration that is potentially well-suited to NFT disputes involving ongoing commercial relationships or creative communities. The Singapore Convention on Mediation (United Nations Convention on International Settlement Agreements Resulting from Mediation, 2018), which entered into force in September 2020 and has been signed by 56 states (though as of mid-2025 Uzbekistan has not yet acceded), provides an international enforcement mechanism for mediated settlement agreements analogous to the New York Convention for arbitral awards. The Convention's entry into force has significantly enhanced the attractiveness of mediation as a dispute resolution mechanism for cross-border commercial disputes, including potentially those involving digital assets.

Online Dispute Resolution (ODR) — the application of technology to facilitate negotiation, mediation, and arbitration, typically through digital platforms — is particularly relevant to NFT disputes, given that the parties to such disputes are frequently in different countries, may be pseudonymous, and may have invested relatively modest sums that do not justify the cost of conventional litigation or formal arbitration. The UNCITRAL Technical Notes on Online Dispute Resolution (2017), while non-binding, provide a framework for ODR systems addressing cross-border B2C (business-to-consumer) disputes. The European Union has experimented with ODR through the ODR Platform established under Regulation (EU) No 524/2013 on online dispute resolution for consumer disputes, though its effectiveness has been limited and its future under the Digital Services Act regime is subject to revision.

Several NFT-specific decentralised dispute resolution platforms have emerged in the blockchain ecosystem, most notably Kleros — a decentralised arbitration protocol built on Ethereum that employs crypto-economic incentives and crowd-sourced juries to resolve disputes. Kleros has been evaluated by scholars including Guillaume, Florence and Riva, Sven, who have noted its innovative design but questioned its legal enforceability: an award issued by a Kleros panel is not, in any existing jurisdiction, automatically enforceable as a judicial judgment or arbitral award under the New York Convention. The award is enforced only through the smart contract's automatic execution, which is effective for digital assets held on-chain but cannot reach off-chain assets, bank accounts, or physical property.

The most fundamental challenge is the classification problem. Each of the three jurisdictions examined approaches NFT classification through the lens of existing legal categories — property, security, financial instrument, commodity, collectible — none of which adequately captures the multidimensional character of NFTs. Professor Primavera De Filippi has aptly observed that blockchain-based assets challenge the fundamental binary of property law (in rem vs. in personam rights), because they create rights that are technically enforced against the entire network rather than against specific identified persons, yet lack the formal recognition of property law. This structural mismatch produces regulatory gaps and enforcement failures.

In Uzbekistan, the gap is most acute: there is no statutory framework, no published judicial decision, and no regulatory guidance specifically addressing NFTs. The consequence is not merely theoretical uncertainty but practical harm to market participants. Uzbek digital artists who have invested time and resources in NFT creation cannot reliably protect their interests in the event of counterparty default; Uzbek buyers who have paid for NFTs cannot rely on established legal mechanisms to enforce delivery or seek redress for misrepresentation; and Uzbek courts and arbitral bodies lack the legal tools to resolve disputes in a principled and predictable manner. This legal vacuum is inconsistent with Uzbekistan's declared policy objectives of developing a robust digital economy and creating a favourable investment climate for technology-based enterprises.

The EU's MiCAR, while representing an important regulatory advance, has taken a deliberate decision to exclude most NFTs from its scope, treating them as outside the financial regulatory perimeter. While this decision was justified by reference to the unique character of individual NFTs, it has left a significant regulatory gap for the large and economically significant market for NFT collections and fractionalised tokens. The "large series" carve-in provision of Article 2(3) MiCAR provides some regulatory traction for collection NFTs, but its application will depend on ESMA guidance that, as of mid-2025, remains preliminary. Moreover, MiCAR does not address the property law, consumer protection, or intellectual property dimensions of NFT transactions, leaving these matters to the divergent private laws of Member States.

On the specific question of ADR, the analysis reveals both the potential and the limitations of existing mechanisms. Arbitration, as the most formally developed ADR mechanism, offers significant advantages for cross-border NFT disputes: procedural

flexibility, confidentiality, finality, and international enforceability under the New York Convention. However, it faces specific obstacles in the NFT context: the validity of arbitration clauses embedded in click-through terms of service or smart contracts is uncertain in most jurisdictions, including Uzbekistan; institutional arbitral bodies lack expertise in blockchain technology and digital asset valuation; and the costs of formal arbitration may be disproportionate to the value of many NFT disputes.

Mediation, while less formally developed for international enforcement purposes (notwithstanding the Singapore Convention), offers advantages of flexibility, party autonomy, and the preservation of commercial relationships that arbitration does not. For NFT disputes arising within creative communities — between artists, collectors, and platforms — mediation may be particularly appropriate. However, Uzbekistan has not yet developed a specialised mediation infrastructure for digital disputes, and the country's mediation law (Law on Mediation, 2018) was drafted without digital assets in mind.

This article has undertaken a systematic comparative legal analysis of the legal status of NFTs and the available dispute resolution mechanisms in Uzbekistan, the European Union, and the United States. The analysis confirms the fundamental hypothesis that the legal status of NFTs is insufficiently determined in all three jurisdictions, and that this legal uncertainty creates real harm for market participants and undermines the objectives of digital economy policy.

The specific findings of the research may be summarised as follows. First, no existing legal category — property, security, financial instrument, collectible — fully captures the multidimensional character of NFTs, which combine elements of each without belonging entirely to any. Legislation that attempts to resolve the classification question by forced inclusion in an existing category risks distorting both the existing category and the regulation of NFTs. Second, the intellectual property dimension of NFTs is consistently the source of the greatest commercial disputes, because market participants routinely misunderstand the relationship between token ownership and copyright ownership. Legislative clarification of this relationship — establishing, for example, that an NFT transfer does not by default transfer copyright unless explicitly stated — would significantly reduce dispute incidence. Third, smart contracts satisfy the formal requirements of contract law in most jurisdictions, provided the standard elements of contract formation are present, but their automatic and irreversible execution creates difficulties for rescission and rectification that existing contract law does not

adequately address. Fourth, existing ADR mechanisms — particularly international commercial arbitration under the New York Convention — are applicable to NFT disputes in principle, but their application is hampered by uncertainties about the validity of smart contract-embedded arbitration clauses, the lack of institutional expertise, and cost-to-value proportionality concerns.

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