ARBITRABLE DISPUTES IN THE METAVERSE: LEGAL CHALLENGES AND FRAMEWORKS FOR VIRTUAL BUSINESS TRANSACTIONS

Muskan Gaur[*]
Ronán Feehily[**]

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* B.A. LL.B. (Hons) (Amity University); LL.M. (Durham University); Admitted to the Bar Council (India).

** *Associate Professor*, *Durham University*, BComm (Hons); LL.B. (Hons); MBA (N.U.I.); LL.M. (Dub); Ph.D. (U.C.T.); DipArb (N.U.I.); PGCAP (Dunelm); PGCTT (Cant), FCIArb FHEA Solicitor (Ireland, Northern Ireland, England and Wales) C.E.D.R. Accredited Mediator.

I. INTRODUCTION

A. Introduction

The metaverse is a three-dimensional virtual environment that can be inhabited rather than viewed on a screen.[1] In the metaverse, users can engage in a variety of activities, such as buying and selling virtual land, working, interacting with others, hosting events like weddings and graduation ceremonies, and playing virtual reality games.[2] As people increasingly conduct virtual business transactions in this vast and immersive digital universe,[3] the need for appropriate dispute-resolution systems becomes critical. In this setting, international arbitral tribunals face both obstacles and possibilities in responding to the distinct nature of disputes resulting from virtual economic transactions undertaken in the metaverse.[4] The metaverse is not a unified framework.[5] It may be more accurate to refer to "metaverses" or diverse virtual ecosystems.[6] Certain metaverses are centralized, managed by a dominant entity, such as Meta's metaverse platform.[7] In contrast others are decentralized, regulated by users or token holders, including platforms like Decentraland and The Sandbox.[8] Some decentralized metaverses adopt structures like Decentralized Autonomous Organizations (DAOs), where the power to make decisions and manage the platform rests with the community members who hold tokens.[9] This model creates substantial

1. Thien Huynh-The, et al., *Blockchain for the Metaverse: A Review*, 143 FUTURE GENERATION COMPUT. SYS., 401, 401 (2023), https://doi.org/10.1016/j.future.2023.02.008 [https://perma.cc/KX2T-T7N3].

2. Karl Blom, et al., *Spilling the Beans on Disputes in the Metaverse*, ITWEB (Oct. 23, 2023), https://www.itweb.co.za/article/spilling-the-beans-on-disputes-in-the-metaverse/Olx4z7kaQg9q56km [https://perma.cc/XE7S-KNKZ].

3. Elizabeth Chan & Emily Hay, *Something Borrowed, Something Blue: The Best of Both Worlds in Metaverse-Related Disputes*, 15 CONTEMP. ASIA ARB. J. 205, 205 (Nov. 30, 2022), https://ssrn.com/abstract=4417975 [https://perma.cc/78L9-B5HM].

4. Blom, et al., *supra* note 2.

5. Chan & Hay, *supra* note 3, at 209.

6. *Id.*

7. *Id.* at 209–210.

8. *Id.* at 210.

9. *Id.*

hurdles in enforcing arbitral awards against DAOs.[10] Operating beyond conventional legal systems via blockchain technology commonly termed as Web3, these environments enable a user-driven internet in which smart contracts execute agreements automatically, without needing any approval from government agencies or state authorities.[11] This changes dispute resolution completely. Here, arbitration uses these self-running contracts.[12] But does this even count as legal 'arbitration' under frameworks like the New York Convention?

Blockchain underpins many metaverse elements through a distributed ledger that acts as a permanent digital record-keeper for all activity. It works by linking groups of data, or "blocks," together in a continuous chain, where each new piece of information is locked to the previous one using secure encryption.[13] To keep the system trustworthy without a central boss, the network uses mathematical puzzles and community-wide agreement, known as consensus mechanisms, to verify that every entry is accurate and secure.[14]

Arbitration, a well-known alternative dispute resolution process, provides a flexible and confidential way for parties to resolve their disputes outside of judicial systems.[15] With the increasing frequency of virtual economic activity, the issue of how international arbitral tribunals can use metaverse technology arises.[16] This includes using virtual reality experiences, gamified simulations, and interactive evidence presentation during hearings to effectively resolve conflicts that arise within the metaverse's virtual domains.[17]

This paper examines on-chain arbitration in the decentralized metaverse—platforms like Kleros, where token-staked anonymous jurors resolve disputes and smart contracts automatically enforce awards directly on the blockchain, bypassing courts entirely.[18] By contrast, off-chain arbitration leverages blockchain tools (i.e., for evidence) but follows traditional processes requiring court enforcement.[19] These distinctions are critical: on-chain lacks a physical seat, and treats code as binding rules, while off-chain aligns with conventional

10. *Id.*

11. *Id.*

12. *Arbitrating Smart Contract Disputes*, NORTON ROSE FULBRIGHT (Oct. 2017), https://www.nortonrosefulbright.com/en-in/knowledge/publications/ea958758/arbitrating-smart-contract-disputes [https://perma.cc/UV64-QRYY].

13. Brooke Becher, What Are Blockchain Nodes and How Do They Work?, BUILTIN (May 30, 2024), https://builtin.com/blockchain/blockchain-node [https://perma.cc/XKV4-5U54]; Chan & Hay, supra note 3, at 210.

14. *Blockchain Technolgy*, CTR. EXCELLENCE IN BLOCKCHAIN TECH., https://blockchain.gov.in/Home/BlockChain?blockchain=blockchain [https://perma.cc/96ED-5EC3] (last visited Jul. 6, 2025); Chan & Hay, *supra* note 3, at 210.

15. *See* RONÁN FEEHILY, INTERNATIONAL COMMERCIAL MEDIATION, 13–14 (2022) (summarizing arbitration, including its various forms). For a discussion on confidentiality in international commercial arbitration, *see* Avinash Poorooye & Ronán Feehily, *Confidentiality and Transparency in International Commercial Arbitration: Finding the Right Balance*, 22 HARV. NEGOT. L. REV. 275 (2017).

16. Rana Sajjad, *Metaverse's First Arbitration Proceeding*, AM REV. INT'L ARBITRATION (Sept. 25, 2023), https://aria.law.columbia.edu/metaverses-first-arbitration-proceeding/ [https://perma.cc/6XQH-5HLB].

17. *Id.*

18. Chan & Hay, *supra* note 3, at 214–15.

19. *Id.* at 215, 223.

frameworks such as the New York Convention.[20] This paper focuses on the question: To what extent are on-chain metaverse arbitrations arbitrable under frameworks like the New York Convention and others?

B. The Metaverse Regulatory Framework

The arbitrability of disputes in the metaverse raises significant concerns about the framework that should regulate them.[21] If disputes in the metaverse are arbitrable, it is critical to build a legal structure that ensures the arbitration procedure is clear, consistent, and legitimate. This framework would need to address jurisdictional issues, procedural concerns, and arbitration award enforcement, among other metaverse-specific aspects.

Understanding and modifying the tools and regulatory frameworks for arbitration in the metaverse is critical to sustaining a fair, efficient, and trustworthy dispute-resolution system in the digital age as virtual transactions become more common and complex.[22] This article goes beyond previous considerations of alternate dispute resolution procedures and goes into the metaverse's potential for arbitrating disputes. It emphasizes the metaverse's immersive and participatory nature. Using these elements could improve the fairness, transparency, and comprehensibility of resolving complex commercial virtual disputes. Arbitration has the potential to be used in a wide range of metaverse disputes. From intellectual property conflicts to contractual violations in virtual economies, using arbitration in metaverse disputes could provide a novel and practical solution.

This article also focuses on what disputes are arbitrable in the metaverse, their arbitrable nature, how they will be regulated, and what legal framework is acceptable or required. It will further analyze relevant regulatory frameworks and assess whether this technology is beneficial for business entities in respect of virtual business transactions. The role of blockchain in the metaverse is assessed to show its usage, complexity, and importance in virtual transactions. Further, the resolution mechanism and how it will work and potentially be regulated is discussed.[23] By analyzing current and previous cases involving virtual commercial transactions that have been arbitrated or litigated, how traditional arbitration procedures were used are examined and how metaverse technology could have improved or changed the dispute settlement process are evaluated.

Legal frameworks and procedures for international arbitration across jurisdictions are assessed. This article examines how these jurisdictions treat developing technologies, such as virtual reality and the metaverse, in the context of conflict resolution. This article explores the legal and ethical implications of using metaverse technology for international arbitration. Concerns such as data

20. *Id.* at 218.

21. *Id.* at 208–09.

22. *See id.* at 207–09 (explaining that the virtual world is becoming more prevalent and advantages of arbitration can be applied to this virtual world).

23. *See* Thien Huynh-The et al., *Blockchain for the Metaverse: A Review*, 143 FUTURE GENERATION COMPUT. SYS., 401, 411 (2023), https://doi.org/10.1016/j.future.2023.02.008 (noting how Blockchain can aid in resolving issues).

privacy, security, and the enforceability of virtual awards are investigated. The international arbitration institutions' rules and guidelines are assessed to determine how they need to be revised to use metaverse technology in conflict settlement.

This article provides jurisdictional clarity, by assessing existing frameworks for addressing jurisdictional issues in the metaverse and proposing reforms for future international arbitration accords and conventions. It also provides procedural improvements. By finding the most effective applications of metaverse tools such as virtual reality experiences and gamified simulations, this article can help to shape new international arbitration rules and processes for the virtual world. This article also assists with evidence guidelines: by analyzing the admissibility and ethical implications of newer evidence forms such as interactive presentations and virtual world re-creations, it can help to define new evidence standards in metaverse arbitration.

Exploring the issue of metaverse-specific arbitration methods as outlined above adds value to the field in various ways. First, there is potential to stimulate creativity by developing arbitration processes specifically designed for the metaverse.[24] Investigating the feasibility and ramifications of holding hearings in this virtual world can yield valuable insights for developing efficient, immersive conflict-resolution procedures.[25] Second, investigating the jurisdictional difficulties surrounding metaverse-based arbitration processes is critical.[26] By analyzing the location characteristics of such processes, we can help to create clearer legal frameworks.[27] This, in turn, reduces conflicts with current jurisdictional norms, making way for a more structured and legally sound environment.[28]

Third, this article intends to improve fairness and openness in metaverse arbitration. Leveraging virtual reality and interactive evidence presentation techniques is vital to ensuring that all concerned parties have a clear understanding of the dispute and the arbitral process.[29] This method can boost trust and acceptance of outcomes by creating a more understandable, interactive platform.[30]

Finally, by demonstrating the validity and effectiveness of metaverse arbitration in providing fair and efficient conflict resolution, this article helps to promote its wider use. Legal stakeholders and businesses may be more likely to adopt this strategy for metaverse transactions, recognizing its potential to improve the overall integrity of the arbitration process in this unique virtual realm.[31]

24. Sajjad, *supra* note 16.
25. *Id.*
26. Chan & Hay, *supra* note 3, at 213.
27. *Id.* at 214.
28. *Id.*
29. *See* Sajjad, *supra* note 16 (discussing how proceedings in the metaverse can be an extension of virtual hearings).
30. *Id.*
31. *See Id.* (noting that metaverse experiences can help participants apply this knowledge to the real world).

II. DISPUTES IN THE METAVERSE

A. Areas of Dispute

The metaverse fosters conflicts between users and platforms, with disputes emerging over the value of virtual products, ownership of user-generated material, and even how people behave through their avatars.[32] Such legal disputes will result from disagreements regarding intellectual property rights among users over ownership of virtual creations such as non-fungible tokens (NFTs).[33] Others will involve third-party rights, for example, where a copyrighted song is used in a virtual world development, a third party may have a claim.[34] Code and security is another area where bugs in the metaverse platform or security breaches may result in user disputes.[35] Similarly, uncertain or unenforceable terms of service in the metaverse may result in user complaints.[36] The way user data is collected, stored, and used in the metaverse could also generate regulatory concerns.[37] In terms of user-to-user contracts, decentralized platforms support user-created contracts, such as smart contracts, for transactions.[38] Disputes may develop if these agreements are unclear or breached.[39]

B. Arbitrable disputes in the Metaverse

As the metaverse is emerging, so are the cases arising out of it.[40] Disputes relating to intellectual property rights within the virtual arena are arbitrable in nature, involving issues such as conflicts over ownership and usage rights of virtual assets.[41] Intellectual property difficulties in the fashion and luxury goods

32. Jason Rix & Katrina Limond, *Real-World Disputes In The Virtual World*, A&O SHEARMAN (Oct. 3, 2023), https://www.aoshearman.com/en/insights/future-disputes-risks/real-world-disputes-in-the-virtual-world [https://perma.cc/ZMF5-T8CK].

33. NFTs are unique digital identifiers that are recorded on a blockchain. They certify ownership and authenticity. They can't be copied, substituted, or subdivided. Ownership is recorded in the blockchain and can be transferred permitting them to be sold and traded. *See* Bobby Allyn, *What's An NFT? And Why Are People Paying Millions To Buy Them?*, NPR (Mar. 5, 2021, 7:00 PM ET), https://www.npr.org/2021/03/05/974089381/whats-an-nft-and-why-are-people-paying-millions-to-buy-them [https://perma.cc/34RU-3VBD] (explaining NFTs).

34. *See, e.g.*, *Intellectual Property Rights in Virtual Worlds*, EUR. COMM'N (Mar. 31, 2025), https://digital-strategy.ec.europa.eu/en/policies/virtual-worlds-intellectual-property [https://perma.cc/6DNG-HPGH] (describing the legal requirements for using third-party copyrighted works in the E.U.).

35. *See* Shiya Liu, *The Security Challenges of the "Metaverse"*, 2 SEC. & SAFETY 1, 2–3 (2023), https://www.researchgate.net/publication/370771589_The_Security_Challenges_of_The_Metaverse [https://perma.cc/NU75-JDRE] (explaining security risks that stem from the metaverse).

36. Amy J. Schmitz, et al., *Resolving NFT and Blockchain Disputes*, STAN. J. BLOCKCHAIN L. & POL'Y 156, 165 (2023).

37. Héctor Laiz-Ibanez, et al., *The Metaverse: Privacy and Information Security Risks*, 5 INT'L J. INFO. MGMT. DATA INSIGHTS 1, 13 (2025).

38. *See* Erika Rasure & Suzanne Kvilhaug, *Smart Contracts on Blockchain: Definition, Functionality, and Applications*, INVESTOPEDIA (Aug. 6, 2025), https://www.investopedia.com/terms/s/smart-contracts.asp [https://perma.cc/D4F4-F9FY] (defining smart contracts and explaining their functions).

39. Blom, et al., *supra* note 2.

40. *See* Sajjad, *supra* note 16 (discussing the new rise of arbitration with metaverse-related cases).

41. Rocco Limongelli & Ludovica Sposini, *The (Virtual) Battle for Intellectual Property Rights in the Metaverse: The Case of Copyright, Trademarks and the NFT Technology*, 6 METAVERSE 2025, 1, 6, https://

industries have already started to surface.[42] In January 2022, French luxury fashion house Hermès sued Mason Rothschild, an artist who was selling "MetaBirkins," digital duplications of Hermès' Birkin bag.[43] Hermès claimed trademark infringement and diluted use of the Birkin moniker.[44] In *Hermès International v. Rothschild*, the argument revolved around trademark infringement and cybersquatting in the metaverse.[45] A federal jury in New York unanimously ruled in favor of Hermès International, confirming that Rothschild had infringed Hermès' trademark rights and was guilty of cybersquatting.[46] While the case is on appeal before the US Court of Appeals for the Second Circuit, it demonstrates the growing necessity for arbitration to resolve intellectual property disputes involving digital assets.[47] Arbitration could provide a more efficient mechanism for resolving such complicated matters, potentially leading to faster results than regular court proceedings.[48]

Consumer disputes emerging from interactions in the metaverse are another type of conflict that can be effectively handled through arbitration.[49] These conflicts may concern virtual property transactions, digital goods purchases, including NFTs, Blockchain transactions, and service agreements between users and platform providers.[50] Metaverse platforms' terms of service include arbitration clauses, which provide an organized and efficient mechanism for addressing and resolving consumer-related complaints, providing a fair process for all parties involved.[51]

Platforms like Roblox adopt the FedArb's Expedited Arbitration Rules,[52] while Meta Avatar[53] and MetaMask[54] employ the American Arbitration Association's Commercial Arbitration Rules and Supplementary Procedures for

www.researchgate.net/publication/389609647_The_virtual_battle_for_intellectual_property_rights_in_the_metaverse [https://perma.cc/CD6V-M3DF].

42. *Intellectual Property Issues in Metaverse and Non-Fungible Token (NFT)*, ONC LAWYERS (May 31, 2022), https://www.onc.hk/en_US/publication/intellectual-property-issues-in-metaverse-and-non-fungible-token-nft [https://perma.cc/9HCK-STQW].

43. *Id.*

44. *Id.*

45. *See generally* Hermès Int'l v. Rothschild, 678 F. Supp. 3d 475 (S.D.N.Y. 2023) (discussing the findings of the case).

46. *Id.* at 481, 487.

47. Blake Brittain, *MetaBirkins NFT Creator, Hermes Square Off in US Trademark Appeal*, REUTERS (Oct. 23, 2024), https://www.reuters.com/legal/litigation/metabirkins-nft-creator-hermes-square-off-us-trademark-appeal-2024-10-23/ [https://perma.cc/ZA36-TQUF]; Andrew Pimlott, *Resolving Crypto Disputes Through International Arbitration*, JDSUPRA (Oct. 28, 2022), https://www.jdsupra.com/legalnews/resolving-crypto-disputes-through-1342082/ [https://perma.cc/5U4Q-DGZ9].

48. Pimlott, *supra* note 47.

49. *See generally,* Schmitz, *supra* note 36 (discussing the complexities of resolving disputes in the metaverse, with a focus on NFTs).

50. *Id.*

51. Chan & Hay, *supra* note 3, at 214.

52. *Roblox Terms of Use*, ROBLOX (Mar. 4, 2026), https://en.help.roblox.com/hc/en-us/articles/115004647846-Roblox-Terms-of-Use [https://perma.cc/LMT2-MUBJ].

53. *Meta Avatars Terms of Service*, META (Oct. 29, 2025), https://www.meta.com/in/legal/avatars/terms-of-service/ [https://perma.cc/B6CL-AZBP].

54. *Terms of Service*, METAMASK, https://community.metamask.io/tos#heading%E2%80%93disputes [https://perma.cc/FWG2-TX99] (last visited Feb. 23, 2026).

Consumer Related Disputes.[55] International arbitration has consequently entered the new virtual economy, and it appears poised to become the preferred dispute resolution option for user-to-platform metaverse conflicts.[56] Pietro Ortolani argues blockchain-based arbitration diverges from traditional legal concepts due to self-execution and lack of court oversight.[57] Ortolani questions if blockchain arbitration is real arbitration.[58] Platforms like Kleros use smart contracts that auto-enforce awards where no courts are needed.[59] Traditional arbitration needs courts; Ortolani says this bypasses court oversight and physical "seats," so it might not qualify as legal arbitration.[60] This doubt is exactly what this paper investigates.[61] However, while these unambiguous rules and procedures regulate disputes across platforms, there is no common system to facilitate the resolution of disputes among metaverse users.[62]

C. The Pivotal Role of Smart Contracts

Disputes arising out of user-to-user transactions in the metaverse can also come under arbitration.[63] User-to-user transactions, which can be interpreted as virtual business transactions in the metaverse, are executed through smart contracts.[64] These contracts play a major role in the metaverse.[65] Smart contracts are contracts that are digitally enabled and execute the provisions of an agreement on their own.[66] The term refers to computer program code that can enable, execute, and enforce the negotiation or performance of an agreement utilizing blockchain technology.[67] To put it simply, it is a tiny computer program that keeps a contract's terms and conditions within a blockchain.[68] This fully digital contract, which operates on blockchain nodes, cannot be modified.[69] A contract

55. *See supra* notes 53–54 (pointing to the terms of service for these platforms).
56. Chan & Hay, *supra* note 3, at 213.
57. Pietro Ortolani, *Recognition and Enforcement of the Outcome of Blockchain-Based Dispute Resolution*, *in* 4 BLOCKCHAIN & PRIVATE INT'L L. 642, 645 (Andrea Bonomi, et al., eds., 2023).
58. *Id.* at 654.
59. Cayetana Santaolalla, *Cryptotribunals: The Unavoidable Change of Arbitration?*, COMP. DIGIT. L. BLOG (Mar. 11, 2025), https://lawandtech.ie/cryptotribunals-the-unavoidable-change-of-arbitration/ [https://perma.cc/M4RS-2NSG].
60. Ortolani, *supra* note 57, at 667–68.
61. *See generally* Ortolani, *supra* note 57 (exploring the intersection of blockchains and arbitration).
62. *See generally id.* (discussing these issues).
63. Chan & Hay, *supra* note 3, at 212, 215.
64. *Id.* at 212.
65. *Id.* at 210.
66. *What Are Smart Contracts on Blockchain?*, IBM, https://www.ibm.com/think/topics/smart-contracts [https://perma.cc/7GXZ-BBSL] (last visited Feb. 23, 2026).
67. *Id.*
68. *See* Becher, *supra* note 13 (describing that a node is a computer system or device that participates in a blockchain network by maintaining a copy of the blockchain's ledger and verifies and authenticates transactions.).
69. *Id*.

is a smart contract if it stores rules, and verifies rules[70], is self-executing, and operates in a decentralized manner.[71]

A smart contract may be written fully in code or it may be a code-based contract with a natural language variant.[72] It may also be a hybrid contract, which covers a broad spectrum of situations, where some contractual obligations are defined in natural language and others are defined in the code of a computer program.[73] E-commerce in the metaverse is made much more efficient through the use of smart contracts, which handle the heavy lifting of virtual business automatically. These digital agreements allow sellers to conduct trades that are both secure and easy to track without needing a middleman. For instance, they can automatically ensure that creators receive their royalty payments instantly and manage the ownership of digital goods with high precision. By automating these core tasks, smart contracts provide a reliable framework for managing every step of a virtual sale.[74]

Smart contracts bring many upsides to metaverse e-shops. A big one is boosting security and openness in transactions.[75] In virtual worlds, where people swap digital assets and currencies, trust hinges on real, verifiable deals.[76] Smart contracts act like an unchangeable logbook; they track every exchange, enforce set rules, and let anyone check the details without fear of tampering.[77] This transparency cuts fraud risks and builds confidence between buyers and sellers.[78] Each transaction is publicly verifiable and not susceptible to fraud.[79] Moreover, developers can bake in escrow features, so sellers get paid only after buyers confirm delivery of the digital goods.[80]

The economy of the metaverse is fueled by the exchange of digital assets, such as virtual real estate, NFTs, and unique online items.[81] Smart contracts streamline ownership transfers and ensure creators get fair pay.[82] For instance, a development firm can embed automatic royalties into their smart contracts.[83] This way creators earn a fixed cut on every resale.[84] This ensures no manual

70. Chetwa Bhardwaj, *What Are Smart Contracts and Are They Legal in India?*, INDIA BRIEFING NEWS (June 21, 2022), https://www.india-briefing.com/news/what-are-smart-contracts-and-are-they-legal-in-india-25343.html/ [https://perma.cc/F9ZU-8YRT].

71. *Id.*; *Smart Contracts on Blockchain: Definition, Functionality, and Applications*, INVESTOPEDIA (June 12, 2024), https://www.investopedia.com/terms/s/smart-contracts.asp [https://perma.cc/CJS4-5Y8C].

72. *Arbitrating Smart Contract disputes*, *supra* note 12.

73. *Id*.

74. *How Smart Contract Development Enhances Metaverse E-Shop Functionality?*, ANTIER SOLS., https://www.antiersolutions.com/blogs/how-smart-contract-development-enhances-metaverse-e-shop-functionality/ [https://perma.cc/J9FW-NCB3] (last visited Mar. 5, 2026).

75. *Id.*

76. *Id*.

77. *Id.*

78. *Id*.

79. *Id*.

80. *Id.*

81. *Id.*

82. *Id.*

83. *Id.*

84. *Id.*

chasing is required and slashes the possibility of any errors and disputes.[85] Smart contracts also allow splitting assets into fractions, so multiple people can own and trade shares,[86] opening up fresh investment paths and a more dynamic market.[87]

As metaverses grow, decentralized finance (DeFi) will take center stage.[88] Smart contracts lay the groundwork for DeFi tools in e-shops, like lending and borrowing.[89] Users could pledge digital assets as collateral for loans,[90] all handled automatically under strict terms.[91] These services also help launch DAOs in the metaverse. Communities can team up to run virtual markets, exchanges, and e-shops collectively.[92]

Projects worldwide are blending blockchain and smart contracts into virtual commerce.[93] Decentraland is a decentralized virtual reality platform based on the Ethereum blockchain,[94] where users buy, sell, and trade virtual land and items via smart contracts and NFTs.[95] The Sandbox, another Ethereum metaverse, lets creators build, play, and monetize content through NFTs and contracts,[96] fueling a user-owned economy.[97] Cryptovoxels enables trading virtual land and assets on Ethereum with the same tech.[98] Somnium Space functions as a virtual reality metaverse that uses smart contracts and NFTs for owning and swapping VR real estate, personalized avatars, and more.[99]

1. Enforcement of Smart Contracts

England and Wales are examples of a jurisdiction that can facilitate and support the use of smart contracts.[100] In November 2019, the UK Jurisdiction Taskforce (UKJT) issued a legal declaration on cryptocurrency and smart

85. *Id.*
86. *Id*.
87. *Id.*
88. *Id.*
89. *Id.*
90. *Id.*
91. *Id*.
92. *Id.*; Jacob W. S. Schneider, *The Metaverse: Decentralized Autonomous Organizations (DAOs)*, HOLLAND & KNIGHT (Nov. 2, 2022), https://www.hklaw.com/en/insights/publications/2022/11/the-metaverse-decentralized-autonomous-organizations-daos [https://perma.cc/TN93-NXRG].
93. ANTIER SOLS., *supra* note 74.
94. *Id*.
95. *Id.*; Michael Willson, *Decentraland Metaverse: A Complete Guide*, BLOCKCHAIN COUNCIL (May 28, 2024), https://www.blockchain-council.org/metaverse/decentraland-metaverse/ [https://perma.cc/B63Y-9ABP].
96. ANTIER SOLS., *supra* note 74; *What Is The Sandbox?*, MEDIUM (June 30, 2020), https://medium.com/sandbox-game/what-is-the-sandbox-850de68d893e [https://perma.cc/C5PH-CBYB].
97. *Id.*
98. *Id.*; Georgia Weston, *Cryptovoxels Metaverse - Everything You Need To Know*, 101 BLOCKCHAINS (July 1, 2022), https://101blockchains.com/cryptovoxels-metaverse/ [https://perma.cc/KY6K-82CG].
99. ANTIER SOLS., *supra* note 74; Jack Kelly, *Somnium Space Is An Immersive Out-Of-This-World Metaverse Experience*, FORBES (Apr. 14, 2022), https://www.forbes.com/sites/jackkelly/2022/02/12/somnium-space-is-an-immersive-out-of-this-world-metaverse-experience/ [https://perma.cc/7L3E-U7LA].
100. Jason Rose & Paul Shehadeh, *Evaluating the UK Jurisdiction Taskforce's "Digital Dispute Resolution Rules, 1.0"*, DAILY JUS (Sept. 22, 2021), https://dailyjus.com/world/2021/09/evaluating-the-uk-jurisdiction-taskforces-digital-dispute-resolution-rules-1-0 [https://perma.cc/2NV9-WX88].

contracts.[101] The UKJT Legal Statement found that, in principle, smart contracts can create binding legal commitments that are enforceable in accordance with their provisions.[102] Following this development the Law Commission of England and Wales included a study on smart contracts as part of its Thirteenth Program.[103] The Law Commission published advice to the UK Government on November 25, 2021, confirming that the current legal framework in England and Wales can facilitate and support the use of smart contracts without the need for statutory law reform.[104] With common law flexibility, England and Wales provides a sufficient robust framework for smart contracts whereby existing legal principles can facilitate them.[105]

2. Validity of Arbitration Clauses in Smart Contracts

Disputes may arise when smart contracts do not function properly due to programming faults or vulnerabilities.[106] Arbitration can consequently play an important role in resolving such disputes.[107] Inclusion of arbitration clauses could provide an aid to dispute resolution challenges that may arise from smart contracts.[108] Parties can build a "smart" arbitration clause right into the contract. It triggers automatically, say, when specific triggers hit or one side asks for it.[109] Pair this with a pause button that freezes the deal until resolved, keeping things steady.[110] The code could set arbitration under standard rules from an institution.[111] Or, it might point disputes to specialized blockchain arbitration bodies.[112] Even better, it lets arbitrators, whether on-chain or off chain, enforce awards straight on the blockchain.[113] They could halt transactions, complete them, or alter the contract itself.[114]

101. *Legal statement on the status of cryptoassets and smart contracts*, UK JURISDICTION TASKFORCE (Nov. 18, 2019), https://technation.io/wp-content/uploads/2019/11/6.6056_JO_Cryptocurrencies_Statement_FINAL_WEB_111119-1.pdf [https://perma.cc/DB7Y-MHLN].

102. *Id.* at 37; Rose & Shehadeh, *supra* note 101.

103. *Smart contracts*, LAW COMM'N (Nov. 25, 2021), https://lawcom.gov.uk/project/smart-contracts/ [https://perma.cc/A4HJ-KTTR].

104. *Id.*

105. *Id*.

106. *See* Chan & Hay, *supra* note 3, at 215 (explaining the limitations of smart contracts).

107. *See id.* at 214 ("The flexibility of the arbitral procedure also means that procedural rules can be designed to suit such disputes.").

108. *Id.*

109. Sam Brown, *Arbitration of cryptoasset and smart contract disputes: arbitration unchained?* THOMSON REUTERS PRACTICAL LAW (July 19, 2023), uk.practicallaw.tr.com/w-040-1142 [https://perma.cc/67L9-EGG9].

110. *Id.*

111. *Id.*

112. *Id.*

113. *Id.*; *see also What Are Distributed Ledger Technologies (DLTs)?*, HEDERA, https://hedera.com/learning/what-are-distributed-ledger-technologies-dlts/ [https://perma.cc/SS3A-4ETY] (last visited Feb. 22, 2026) (stating that a distributed ledger, known also as a shared ledger or distributed ledger technology (DLT) is a system where replicated, shared, and synchronized digital data is geographically distributed across numerous sites, countries, or institutions and accessible by multiple people around the world; the most popular form is blockchain.).

114. Brown, *supra* note 109.

In real life, though, everyone needs a clear, separate written deal to arbitrate crypto disputes.[115] Online user agreements spark debates, especially for global, digital crypto businesses in the metaverse.[116] Several legal cases in the United States have examined whether specific disagreements must be settled through arbitration or if they can stay in a traditional court, A key part of this debate is the "competence-competence" principle, which suggests that an arbitrator, rather than a judge, should be the one to determine if they have the power to hear a case.[117] This was illustrated in a California court ruling involving a defendant who operated two different platforms with different user rules. The court decided that since only one of those platforms required arbitration, the arbitrator was the one responsible for determining whether the user's specific legal claims were covered by that agreement.[118]

In *Rensel v. Centra Tech*,[119] the U.S. District Court for the Southern District of Florida held that an arbitration agreement in a website's terms does not apply when a buyer purchases tokens by sending Ether directly to a smart contract on the Ethereum blockchain,[120] bypassing the site entirely. Investors used Ether, the Ethereum network's cryptocurrency, to fund the token sale automatically through the DAO smart contract, no website interaction required. Since the purchase happened directly via the smart contract, the buyer never agreed to the website's arbitration clause, rendering it inapplicable.[121]

3. Public Policy Concerns and the Restriction on Crypto Assets

While public policy and consumer protection concerns traditionally limit arbitrability, their relevance differs by arbitration type.[122] Off-chain cases (needing court enforcement) face these issues.[123] On-chain awards auto-execute without courts, avoiding them entirely.[124] Arbitrability, or whether the content of a dispute may be resolved by arbitration as a matter of law, is a potential issue in some jurisdictions due to public policy concerns and the restriction on crypto assets.[125] There are currently many virtual contractual partnerships that include typical arbitration agreements and refer conflicts to arbitration under a variety

115. *Id.*

116. *Id.*

117. *See* Ronán Feehily, *Separability in International Commercial Arbitration: Confluence, Conflict and the Appropriate Limitations in the Development and Application of the Doctrine*, 34 ARB. INT. 355, 359–61 (2018) (discussing the competence of tribunals in international commercial arbitration, including their capacity to determine their own competence under the doctrine of "competence-competence").

118. Johnson v. Maker Ecosystem Growth Holdings, Inc., No. 20-cv-02569-MMC, 2020 WL 13836392, at *2 (N.D. Cal. Sept. 25, 2020).

119. Rensel v. Centra Tech, Inc., No. 17-24500-Civ-Scola, 2019 U.S. Dist. LEXIS 223704 (S.D. Fla. Sept. 17, 2019) (vacated by Rensel v. Centra Tech, Inc., 2 F.4th 1359 (11th Cir. 2021)..

120. Brown, *supra* note 109.

121. *Id.*

122. *Id.*

123. *Id.*

124. Katarzyna Szczudlik, *"On-chain" and "off-chain" arbitration: Using smart contracts to amicably resolve disputes*, NEWTECH (June 4, 2019), https://newtech.law/en/articles/on-chain-and-off-chain-arbitration-using-smart-contracts-to-amicably-resolve-disputes [https://perma.cc/QSH3-WPMM].

125. Brown, *supra* note 109.

of institutional procedures.[126] Some of the world's most popular cryptocurrency exchanges, including Binance,[127] KuCoin,[128] and Coinbase,[129] refer to arbitration in places like Hong Kong and Singapore that have led to proceedings. The rules of use for front-end user interfaces of decentralized exchanges (DEXs) like Uniswap Labs, which interact with smart contracts on the blockchain, include a reference to arbitration for disputes.[130] Arbitration provisions are included in the conditions of service of NFT trading platforms such as Open Sea and Nifty Gateway LLC, and the latter was successful in obtaining a stay of English court proceedings at first instance in favor of such a reference.[131] Metaverse channels, such as those run by metaverse inventor the Decentraland Foundation and auction house Sotheby's, Inc., direct disputes to arbitration in Panama and New York, accordingly.[132] Token issuances can now include arbitration agreements and governing law, allowing for traditional or on-chain arbitration to resolve disputes.[133] In some situations, conflicts may be resolved on-chain, with decentralized pseudonymous "arbitrators" voting on the issue and, in some cases, with direct execution of the "award" via smart contracts.[134]

4. Consumer Protection

Arbitration has been shown to be limited in some consumer protection situations.[135] For example, the English Court of Appeal refused to stay proceedings initiated by a UK-based NFT collector against a marketplace in violation of a JAMS arbitration agreement, even though arbitration was taking place in New York, and directed that the English court determine the legality of the arbitration

126. *See Al Tamimi & Company, Use of modern technology in arbitration: evolution through necessity*, LEXOLOGY (July 31, 2020), https://www.lexology.com/library/detail.aspx?g=8869fc87-e787-419c-ab6a-23e33905a366 [https://perma.cc/D5JR-X4M4] (discussing different global arbitration rules).

127. Thomas Yates, *Lochan v. Binance Holdings Limited*, GOWLING WLG (Feb. 3, 2026), https://gowlingwlg.com/en/insights-resources/articles/2026/lochan-v-binance-holdings-limited [https://perma.cc/24CU-L2ME].

128. *Singapore Court Locks Crypto Exchange KuCoin's Web Domain*, IMPREZA (Apr. 16, 2020), https://impreza.host/singapore-court-locks-crypto-exchange-kucoins-web-domain/ [https://perma.cc/JW6B-A6EJ].

129. *Cryptocurrency Spot Exchanges*, MARKETCAP (last visited Feb. 23, 2026) https://coinmarketcap.com/rankings/exchanges/ [https://perma.cc/8DUB-MU9F]; Dan Perera & Justine Barthe-DeJean, *The Arbitrability of Web3 Disputes: An Effective Court of First World Problems?*, HFW (Mar. 16 2023), https://www.hfw.com/insights/the-arbitrability-of-web3-disputes-an-effective-court-of-first-world-problems-march-2023/ [https://perma.cc/P299-JQ74].

130. *Uniswap Labs Terms of Service*, UNISWAP SUPPORT (Feb. 2, 2026), https://support.uniswap.org/hc/en-us/articles/30935100859661-Uniswap-Labs-Terms-of-Service [https://perma.cc/NFN2-ASQB].

131. *OpenSea Terms of Service*, OPENSEA (Sept. 14, 2025), https://opensea.io/tos [https://perma.cc/M3SB-M58M]; Soleymani v. Nifty Gateway LLC, [2022] EWCA Civ 1297 (Eng.) ¶¶ 4–5.

132. *Decentraland Terms of Use*, DECENTRALAND, https://decentraland.org/terms/ [https://perma.cc/E9ND-E769] (last visited Feb. 23, 2026); *Terms & Conditions of Use*, SOTHEBY'S (Apr. 26, 2019), https://www.sothebys.com/en/terms-conditions [https://perma.cc/3N5T-YSP6].

133. *See* Matthew Moss, *Token Issuance: What Is It and How Does It Work?*, ALPHAPOINT (June 5, 2024), https://alphapoint.com/blog/token-issuance/ [https://perma.cc/4BGS-35VF] (stating that token issuance is an essential aspect of the blockchain ecosystem which involves creating and distributing new digital assets that holders can use within specific networks).

134. Perera & Barthe-Dejean, *supra* note 131.

135. *Id*.; Soleymani v. Nifty Gateway LLC, [2022] EWCA Civ 1297.

agreement.[136] The English courts have also concluded that the presence of an arbitration agreement in a cryptocurrency exchange's user agreement did not strip it of jurisdiction to hear claims against the exchange filed by an English customer.[137] In other proceedings, the English Commercial Court denied an application under Section 101 of the Arbitration Act 1996[138] to enforce an arbitral award made by a California-based tribunal that had dismissed a challenge to its jurisdiction.[139] The judge concluded that the arbitrator's reluctance to apply or even consider English law, specifically, the Consumer Rights Act 2015 and the Financial Services and Markets Act 2000[140], in a case where one of the parties was a UK-based consumer, made implementation of the award contrary to public policy.[141] As a result, the court denied enforcement of section 103(3) of the Arbitration Act 1996.[142] The court emphasized that, while the necessity for parties to arbitrate their disputes is not necessarily unfair, the circumstances of this instance were unique.[143] A reasonable UK consumer would have agreed to arbitration in the UK under the Arbitration Act 1996, which provides a qualified right of appeal in circumstances of legal error.[144] However, such a consumer would most likely not have agreed to arbitration in California under the JAMS Rules and the US Federal Arbitration Act 1925.[145] This rationale was the foundation for the court's ruling.[146]

5. New Arbitration Rules

In 2018, JAMS released a set of proposed rules for disputes involving smart contracts (also referred to as the JAMS Smart Contract Clause and Rules, or JAMS Rules).[147] These rules are specifically designed to accommodate the unique features of smart contracts.[148] For example, discovery is limited to the deposition of an expert witness who interprets the code, and the arbitrator's evidence review is limited to that deposition, the code itself, any wrapper contracts[149], and relevant witness testimony.[150] The JAMS Rules also define criteria

136. Soleymani v. Nifty Gateway LLC, [2022] EWCA Civ 1297 (Eng.).

137. Chechetkin v. Payward Ltd., [2022] EWHC 3057 (Ch) ¶¶ 52-53 (Eng.).

138. Arbitration Act, 1996, c. 23, § 101 (UK).

139. Payward Inc. v. Chechetkin [2023] EWHC 1780 ¶¶ 1, 169 (Comm).

140. Financial Services and Markets Act, 2000, c. 8 (UK).

141. Payward Inc. v. Chechetkin, [2023] EWHC 1780 ¶¶ 154–55 (Comm).

142. *Id.* at ¶ 166; *see also* Arbitration Act 1996, c. 23, § 103(3) (UK) (detailing the Act the Court denied enforcement of).

143. *See* Payward Inc. v. Chechetkin, [2023] EWHC 1780 ¶¶ 100 (Comm) (finding the claim should not have been brought in the JAMS Arbitration nor bound by the arbitrator's determinations).

144. *Id.* at ¶¶ 136, 138.

145. *Id.* at ¶¶ 138.

146. *Id.* at ¶¶ 126–145.

147. *JAMS Smart Contract Clause and Rules*, JAMS, https://www.jamsadr.com/rules-smart-contracts [https://perma.cc/H4DV-G2SA] (last visited July 16, 2025).

148. *Id.*

149. *See Understanding Wrapper Agreements: A Guide & Template*, TERMS.LAW (Mar. 14, 2024), https://terms.law/2024/03/14/wrapper-agreements-guide-template/ [https://perma.cc/F36Q-GSAX] (describing the function of wrapper contracts, which detail the general terms and conditions governing future contracts).

150. JAMS, *supra* note 149.

for evaluating smart contracts written in code, giving priority to the code.[151] The arbitrator will only accept a "translation" of the code into natural language if it is confusing or includes a logical conflict.[152] Furthermore, the process is intended to be extremely fast, with the arbitrator obligated to make an award within 30 days of their appointment.[153]

In 2021, the UK Jurisdiction Taskforce of Lawtech UK, an industry led initiative,[154] published the Digital Dispute Resolution Rules (DDRR) for settling digital conflicts.[155] The DDRR rules go beyond JAMS in some ways.[156] They offer a fast-track process, filling gaps with the English Arbitration Act 1996 or party deals, with a default thirty-day process. The Society for Computers and Law appoints arbitrators.[157] This enables binding, on-chain enforcement with limited appeals.[158] Parties can stay anonymous if they agree.[159] Arbitrators with appropriate means may alter digital assets directly.[160]

When EOSIO launched its blockchain in 2018, it incorporated arbitration into its constitution, though its legal force is still questioned.[161] The EOS Core Arbitration Forum (ECAF) ran it under their Dispute Resolution Rules.[162] Awards and temporary directives issued through this arbitration framework were implemented straight on the blockchain by its validators; this is what iscalled on-chain enforcement.[163] Short as its run was, surviving records paint it as a sharp, capable setup for ironing out disputes.[164] It handed down sound judgments and rapid fixes, including locking funds over suspected crypto scams.[165] Arbitrators appeared to be volunteers from the cryptocurrency community, although it is unclear whether they had proper legal training or expertise.[166]

D. On-chain Arbitration

On-chain arbitration includes various methods and ideas for resolving disputes.[167] These range from simple improvements to traditional off-chain processes, such as using blockchain to share and store case files, to bigger changes

151. *Id.*
152. *Id.*
153. *Id.*
154. *About LawTechUK*, LAWTECHUK, https://lawtechuk.io/ukjt/ [https://perma.cc/42BY-4GDG], (last visited Mar. 5, 2026).
155. *Digital Dispute Resolution Rules*, LAWTECHUK 4, https://lawtechuk.io/reports/digital-dispute-resolution-rules/ [https://perma.cc/D4TS-A6YB], (last visited July 16, 2025).
156. *Id.*
157. *Id.*
158. *Id.*
159. *Id.*
160. *Id.*; *see* also Rose & Shehadeh, *supra* note 101 (discussing DDRR).
161. Brown, *supra* note 109.
162. *Id*.
163. *Id*.
164. *Id*.
165. *Id*.
166. *Id*.
167. *Id.*

that differ from standard practices.[168] These various forms of digital arbitration often blend together, especially when the final decision is automatically enforced by the blockchain itself.[169]

There are numerous examples of on-chain procedures.[170] Multi-signature transactions are a typical kind of on-chain adjudication, while not exactly arbitration.[171] This method is frequently utilized when crypto assets are used for payments, and it addresses the simple question of whether the transfer should occur.[172] In its most basic form, crypto assets are stored in a wallet protected by three keys, with two keys necessary to authorize a transfer.[173] If both parties agree, they can use their respective keys to execute the transaction.[174] If a dispute emerges, a neutral third party will decide whether to proceed with the transfer using their key.[175]

The technique known as Oracles, while not quite arbitration, resolves disagreement by analyzing a limited set of data.[176] For example, if there is a debate regarding whether a given quantity of Bitcoin was received in a specific wallet, the blockchain record may be used to verify the transactions between the sending and receiving wallets, ensuring that the correct amount of Bitcoin was transferred.[177]

1. "On-chain" Arbitration Systems and Applications

Traditional arbitration methods have been adapted to blockchain technology and integrated with other applications, such as smart contracts.[178] For example, Datarella's CodeLegit project created open-source technology that includes its own "Blockchain Arbitration Rules" for smart contracts.[179] For instance, where one party considers the other has breached a legal contract and freezes the smart contract using the Arbitration Library's '"pauseAndSendToArbitrator' function.[180] This function notifies an Appointing Authority, as defined in the Blockchain Arbitration Rules, which subsequently appoints an

168. *Id.*

169. *Id.*; *The coming of crypto arbitration* (Dec. 6, 2023), WERKSMANS ATT'YS, https://www.werksmans.com/legal-updates-and-opinions/the-coming-of-crypto-arbitration/ [https://perma.cc/58WH-QL5M].

170. Syedur Rahman, *On-Chain vs Off-Chain Arbitration in Crypto Disputes*, RAHMAN RAVELLI (May 12, 2024), https://www.rahmanravelli.co.uk/expertise/cryptocurrency/articles/on-chain-vs-off-chain-arbitration-in-crypto-disputes/ [perma.cc/66CZ-A9TE].

171. *Id.*

172. *Id.*

173. *Id.*

174. *Id.*

175. *Id.*

176. *Id.*

177. *Id.*; *What Is a Blockchain Oracle?*, CHAINLINK (Feb. 2, 2026), https://chain.link/education/blockchain-oracles [perma.cc/JY6D-L9ME].

178. Rahman, *supra* note 172.

179. Michael Reuter, *CodeLegit Conducts First Blockchain-based Smart Contract Arbitration Proceeding*, DATARELLA (Jul. 16, 2017), https://datarella.com/codelegit-conducts-first-blockchain-based-smart-contract-arbitration-proceeding/ [perma.cc/LQ4Q-9832].

180. *Id.*

arbitrator.[181] The arbitrator considers the claims and defenses, renders a decision, and announces the award.[182] In accordance with the award, the Appointing Authority either restarts, alters, or terminates the smart contract.[183] The arbitrator gets paid from the funds retained in the challenged smart contract.[184]

Kleros, which runs on the Ethereum blockchain, employs volunteer "juries" that are incentivized by fees to support the majority decision.[185] Kleros has also tried to standardize code (based on ERC token standards) for arbitration agreements in decentralized applications (dApps).[186] It was apparently involved in a hybrid arbitration process in which the arbitrator submitted the issue to Kleros before incorporating its ruling into the final award, which was eventually enforced by Mexican courts.[187]

Aragon is also a piece of software that allows you to establish smart contract-based DAOs on the Ethereum blockchain.[188] It backs the Aragon Network Jurisdiction, an arbitration mechanism meant to resolve disputes between DAOs and their members.[189] However, as there is little evidence on them, it is uncertain whether they are currently active or maintained.[190]

Certain blockchain and distributed ledger systems come equipped with built-in arbitration frameworks.[191] These specialized modules allow users to settle disputes using customized rules directly on the platform.[192] Examples include Hedera Hashgraph, which allows arbitrators[193] to modify smart contract code to fix mistakes or undo transactions.[194] Similarly, the Jur project offers modular tools for conflict resolution.[195] In the payments sector, COTI utilizes a system of "juries" who are paid in the network's native currency to settle disagreements.[196]

181. *Id.*
182. *Id.*
183. *Id.*
184. *Id.*
185. Luis Bergolla, et al., *Kleros: A Socio-Legal Case Study Of Decentralized Justice & Blockchain Arbitration*, 37 OHIO ST. J. DISP. RESOL. 55, 62, 66 (2022).
186. Clément Leseage, et al., *Kleros Short Paper v.1.0.7*, KLEROS 1, 3 (Sept. 2019), https://kleros.io/whitepaper.pdf [perma.cc/67UV-N4KT].
187. Maxime Chevalier, *Arbitration Tech Toolbox: Is a Mexican Court Decision the First Stone to Bridging the Blockchain Arbitral Order with National Legal Orders?*, KLUWER ARB. BLOG (Mar. 4, 2022), https://legalblogs.wolterskluwer.com/arbitration-blog/arbitration-tech-toolbox-is-a-mexican-court-decision-the-first-stone-to-bridging-the-blockchain-arbitral-order-with-national-legal-orders/ [perma.cc/PH4L-2X7M].
188. Andrea Peña-Calvin, et al., *A Categorization of Decentralized Autonomous Organizations: The Case of the Aragon Platform*, 11 IEEE TRANSACTIONS ON COMPUTATIONAL SOC. SYS. 8143, 8145–46 (2024), https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=10217072 [https://perma.cc/7EK2-GT7D].
189. *Id.* at 8144.
190. *See id.* at 8144–45 (noting the brief history of DAOs and a relative lack of research regarding DAOs).
191. Ansh Aditya & Himanshu Kumar, *The Symphony of Smart Contracts & Blockchain Arbitration: Automating Justice in Decentralized Systems*, V INDIAN J. INTEGRATED RSCH. L. 460, 465 (2025).
192. *Id.*
193. *Id.*
194. *Id.*
195. *Id.*
196. *Id.*

One of the most significant advantages of these systems is "on-chain" enforcement.[197] This is particularly useful in the crypto industry because it solves the problem of how to correct an "unchangeable" ledger in cases of fraud, theft, or technical errors.[198] Current options for "on-chain" enforcement vary widely.[199] These include giving arbitrators the power to directly change or control a smart contract, or using methods that skip national courts.[200] This approach can speed up dispute resolution, make it more effective, and provide fixes where none existed before. However, it hands arbitrators significant freedom without the standard checks from national arbitration laws.[201]

One method lets an arbitrator release cryptocurrency from an escrow or multi-signature wallet or edit the smart contract's code.[202] This can correct errors or deliver a fair outcome, such as reversing or finishing a transaction.[203] To handle these powers properly and safely, though, the arbitrator must excel in both coding and legal knowledge.[204]

Another more complex but potentially effective solution is to record arbitration awards (or court judgements) published on a blockchain.[205] This idea was central to EOS arbitration system.[206] Under that model, the nodes running the EOSIO blockchain were expected to carry out arbitration awards issued under the ECAF rules.[207] However, in practice, this did not work smoothly because the awards were not implemented consistently which was one of the reasons the system failed and was eventually abandoned.[208]

The tension between legal rulings and blockchain technology was highlighted in the case of *Tulip Trading v. Bitcoin*.[209] The claimant asked a court to force developers to rewrite the Bitcoin code to recover stolen funds.[210] While the developers argued they lacked the power or duty to do so.[211] A different outcome was seen with Bitcoin SV (BSV). The Bitcoin Association for BSV uses a "notary" system that allows court orders to be executed directly on the blockchain.[212] However, for this to work, the network's miners must agree to follow the notary's instructions, and it remains uncertain how widely this practice is being adopted by the mining community.[213]

197. *Id.* at 467.
198. *Id.*
199. *Id.*
200. *Id.*
201. *Id.*; *see also The Digital Dispute Resolution Rules*, COVINGTON & BURLING LLP (June 29, 2021), https://www.cov.com/en/news-and-insights/insights/2021/06/the-digital-dispute-resolution-rules [perma.cc/886X-PVG8] (detailing the UK Digital Dispute Resolution Rules).
202. Aditya & Kumar, *supra* note 193, at 467.
203. *Id.*
204. Brown, *supra* note 109.
205. *Id*.
206. *Id*.
207. *Id*.
208. *Id.*
209. *Id*.; Tulip Trading Ltd. v. Bitcoin Ass'n for BSV [2022] EWHC 667 (Ch) (U.K.).
210. Brown, *supra* note 109.
211. *Id.*
212. *Id.*
213. *Id*.

With decentralized arbitration platforms, blockchain technology enables community-selected arbitrators to arbitrate disputes and enforce decisions using smart contracts.[214] These platforms provide a new method of dispute resolution in the metaverse, but they confront substantial legal issues—including questions concerning the legal legitimacy of decentralized arbitral awards.[215]

III. BENEFICIAL FOR BUSINESS ENTITIES INVOLVED IN VIRTUAL BUSINESS TRANSACTIONS?

Business dealings in the metaverse differ significantly from regular trade.[216] These transactions frequently involve digital assets like cryptocurrencies, NFTs, and virtual real estate.[217] Unlike physical transactions, virtual transactions take place inside a decentralized digital environment that is frequently managed by smart contracts and blockchain technology.[218] Examples of such transactions include cryptocurrency transactions.[219] The primary means of transaction is cryptocurrency, such as Bitcoin, Ethereum, and newer coinage built expressly for metaverse platforms such as MANA in Decentraland.[220] These currencies enable the purchase of virtual goods and services.[221]

Non-Fungible Tokens are also an example.[222] They are unique digital assets that include virtual land, artwork, and in-game objects.[223] NFTs are bought, sold, and exchanged on a variety of blockchain platforms, giving consumers ownership rights to digital content.[224] NFTs are generally seen as the digital counterpart of property documents, granting the bearer ownership of a certain digital item.[225] However, ownership of an NFT does not always convey intellectual property rights over the content it represents, which could lead to disagreements over the extent of rights granted.[226]

Virtual commercial transactions employing NFTs, or other digital assets can result in significant intellectual property difficulties, especially if the

214. Aditya & Kumar, *supra* note 193, at 462–63.

215. *Id*. at 466.

216. Abigail Cessna, et al., *The metaverse: risks and opportunities for businesses*, CLIFFORD CHANCE (July 28, 2022), https://www.cliffordchance.com/insights/resources/blogs/talking-tech/en/articles/2022/07/the-metaverse-risks-and-opportunities-for-business.html [https://perma.cc/Y79C-SCHU].

217. *Id*.

218. Rakesh Sharma, *Non-Fungible Token (NFT): What It Means and How It Works*, INVESTOPEDIA (Dec. 31, 2025) https://www.investopedia.com/non-fungible-tokens-nft-5115211 [https://perma.cc/PE9A-MFSQ].

219. *Id*.

220. *Id*.; *An Introduction to MANA & Its Role in the Decentraland Ecosystem*, DECENTRALAND, https://decentraland.org/blog/about-decentraland/an-introduction-to-the-decentraland-mana-ecosystem [https://perma.cc/UB3U-QLK5] (last visited Mar. 9, 2026).

221. Sharma, *supra* note 220.

222. *Id*.

223. *Id*.

224. *Id*.

225. *Non-Fungible Tokens and Intellectual Property Rights - Can the Use of NTFs Lead to IP Infringements?*, EUROJUST IPC PROJECT 2, https://www.eurojust.europa.eu/sites/default/files/assets/eurojust-nfts-intellectual-property-rights-flyer.pdf [https://perma.cc/DT6G-8BGN] (last visited Mar. 2, 2025).

226. *Id*.

underlying information is copyrighted.[227] For example, selling virtual objects with branded logos or characters could result in infringement accusations.[228] It is lawful to create, sell, and resell NFTs as long as you observe copyright rules and sell actual assets.[229]

Virtual Real Estate constitutes a further example.[230] The metaverse allows users and corporations to buy, sell, and lease virtual land.[231] This virtual real estate is frequently exchanged using NFTs on sites such as Decentraland and the Sandbox.[232] Virtual properties, similar to actual real estate, can increase in value and are utilized for a variety of purposes, such as holding events, building virtual shopfronts, and generating advertising income.[233]

As virtual business transactions grow increasingly common; the legal community must take proactive steps to build and strengthen the regulatory frameworks required for fair and effective dispute resolution in the metaverse. As commercial parties attempt to create and sustain a presence in the metaverse, they will enter into contractual agreements to secure the necessary technical and industrial knowledge.[234] The development of new products and services, as well as new collaborations, eventually results in fresh disputes.[235] Decentraland is an example.[236] It is a decentralized virtual environment in which users can develop, explore, and monetize content and applications.[237] In March 2021, a virtual block of land in Decentraland sold for more than $900,000, demonstrating the economic potential of virtual real estate.[238]

The Sandbox enables users to create, own, and monetize gaming experiences with NFTs and SAND, the platform's money.[239] In 2022, the Sandbox announced a collaboration with Warner Music Group to establish a music-themed virtual world, demonstrating the rising convergence between virtual

227. *Id*. at 3.

228. *Id*.

229. *Id*.; *A Legal Guide to NFTs*, HARRIS SLIWOSKI LLP (Mar. 14, 2023), https://harris-sliwoski.com/blog/a-legal-guide-to-nfts/ [https://perma.cc/8XMU-AGCX].

230. Riaz Pirmohamed, et al., *The-Metaverse-When-Is-Real-Estate-No-Longer-Real*, CLIFFORD CHANCE 3 (Sept. 2022), https://www.cliffordchance.com/content/dam/cliffordchance/briefings/2022/09/the-metaverse-when-is-real-estate-no-longer-real.pdf [https://perma.cc/FU75-KT2N].

231. *Id*.

232. *Id*.

233. *Id*.

234. *Id*. at 6.

235. Karl Blom & Brittany Leroni, *Spilling the beans on disputes in the Metaverse*, WEBBER WENTZEL (Oct. 24, 2023) https://www.webberwentzel.com/News/Pages/spilling-the-beans-on-disputes-in-the-metaverse.aspx [https://perma.cc/U3GB-NY77].

236. *See, e.g.*, *Decentraland*, DECENTRALAND, https://decentraland.org/ [https://perma.cc/Y7VM-QQAS] (last visited Mar. 1, 2026) (using Decentraland as an example of a new virtual space where disputes could arise).

237. *Id.*

238. *Virtual Real Estate Plot Sells for Close to $1 Million*, ECON. TIMES, (June 18, 2021), https://economictimes.indiatimes.com/news/international/business/virtual-real-estate-plot-sells-for-close-to-1-million/articleshow/83639252.cms [https://perma.cc/FP89-VGRQ].

239. *Welcome to The Sandbox*, THE SANDBOX, https://docs.sandbox.game/en [https://perma.cc/5BYT-YV88] (last visited Mar. 1, 2026).

worlds and conventional sectors.[240] Hence, while there are clearly opportunities to engage in metaverse business in various forms,[241] it is important that business entities are aware of, and prepared for, the potential conflicts that can arise in the metaverse and how best they can be resolved.

A. Jurisdictional Variability

Most metaverse platforms have arbitration agreements in their terms of service.[242] For example, Decentraland's terms of service includes a dispute resolution clause that includes arbitration under the ICC standards.[243] Similarly, Binance's terms of use include an arbitration clause that states that user-to-platform arbitration shall be seated in the ADGM.[244] The arbitration will be handled in accordance with the ADGM's laws, which give guidelines for the arbitration procedure, including arbitrator selection, procedural matters, and award enforcement.[245]

B. Comparative Analysis of Arbitration Laws in the UK, United States and India

Metaverse arbitration challenges domestic laws: UK Arbitration Act 1996 struggles with virtual "seats;";[246] US Federal Arbitration Act lacks metaverse guidance;[247] and India's 1996 Act requires code-defined "place" of arbitration.[248]

1. The UK's Arbitration Act 1996

The UK's Arbitration Act 1996 establishes a comprehensive framework for domestic and international arbitration in England, Wales, and Northern Ireland.[249] The Act is founded on the concepts of party autonomy, minimal court

240. *The Sandbox Partners with Warner Music Group*, WARNER MUSIC GRP. (Jan. 27, 2022), https://www.wmg.com/news/sandbox-partners-warner-music-group-create-music-themed-world-metaverse-36116 [https://perma.cc/244Y-CP9A].

241. *See* text accompanying *supra* notes 238 and 241 (using Decentraland and The Sandbox as examples demonstrating the various opportunities to engage in the metaverse business).

242. Ajayi Paul, et al., *Metaverse Arbitration: Prospect, Challenges and Solutions*, MEDIUM (Jan. 30, 2024) https://lasuadrsociety.medium.com/metaverse-arbitration-prospect-challenges-and-solutions-85acc0db7a4a [https://perma.cc/95LB-H5AU].

243. Terms of Service, DECENTRALAND, https://forum.decentraland.org/tos [https://perma.cc/3XKN-W4XG] (last visited Mar. 1, 2026).

244. *Terms of Use*, BINANCE, https://www.binance.com/en/terms [https://perma.cc/RDZ3-YSKD] (last visited Mar. 1, 2026).

245. *Id.*

246. *See* Ben Giaretta, *Changes to arbitration law in England and Wales – Arbitration Act 2025 explained*, THE L. SOC'Y (Mar. 26, 2025), https://www.lawsociety.org.uk/topics/civil-litigation/arbitration-act-2025-explained [https://perma.cc/PEN8-ZU8L] (noting that the Arbitration Act of 2025 was amended which deals with the seat issue).

247. *See* Federal Arbitration Act, 9 U.S.C. §§ 1–16 (2026) (lacking guidance on the metaverse).

248. The Arbitration and Conciliation Act, 1996, ch. V [20] (Act. No. 26/1996) (India).

249. *Review of the Arbitration Act 1996*, L. COMM'N, https://lawcom.gov.uk/project/review-of-the-arbitration-act-1996/ [https://perma.cc/9FR8-59SC] (last visited Mar. 1, 2026).

intrusion, and the enforceability of arbitration agreements and awards.[250] There are a number of key provisions relevant to the metaverse.

Section 6A provides that unless both sides say otherwise, the law of the seat of the arbitration applies to the arbitration agreement.[251] This is significant in metaverse disputes because people often operate from different jurisdictions and may use smart contracts or decentralized systems that don't follow one country's laws.[252] The tribunal's ability to determine its own jurisdiction, known as "competence-competence," is provided for in the Act, and this is critical for resolving disputes about the legality of arbitration agreements in the context of smart contracts and digital transactions.[253] The Act also establishes grounds for contesting an arbitral award, including substantial irregularity, which may be important in circumstances where the arbitration procedure takes place wholly online, thereby raising concerns regarding fairness or procedural regularity.[254]

2. The United States Federal Arbitration Act

The Federal Arbitration Act (FAA) regulates arbitration in the United States and establishes a solid legal basis for the enforcement of arbitration agreements and awards.[255] The FAA preempts state laws that oppose arbitration agreements, making it a strong framework for dispute resolution.[256] There are three primary provisions that relate to the metaverse. Chapter 1, Section 2 of the FAA provides the concept that arbitration agreements are "valid, irrevocable, and enforceable," which enables the use of arbitration clauses in smart contracts and virtual transactions in the metaverse.[257] Section 9 of the FAA makes it easy to enforce arbitration outcomes by permitting parties to seek confirmation of awards in federal courts, which is critical for ensuring that virtual decisions have real-world legal effect.[258] Section 10 provides the grounds for overturning an arbitration ruling under the FAA, and they include corruption, fraud, or undue means, as well as evident bias or arbitrator misconduct,[259] which could be used

250. *The English Arbitration Act 2025*, LONDON CT. OF INT'L ARB., https://www.lcia.org/the-english-arbitration-act-2025.aspx [https://perma.cc/4WK2-UDCK] (last visited Mar. 12, 2026). The Arbitration Act 1996 was amended by the Arbitration Act 2025 that came into force on 1 August 2025. The changes center primarily around arbitrators themselves, reflecting the way the role of the arbitrator has become increasingly professionalized since the 1996 Act was introduced. For an overview of the changes, *see* Giaretta, *supra* note 248.

251. Arbitration Act, 2025 § 1 (U.K.).

252. *Id.* This amendment to the Arbitration Act 1996 was introduced by § 1 of the Arbitration Act 2025. This reversed the rule confirmed by the UK Supreme Court in *Enka Insaat Ve Sanayi A.S. v OOO Insurance Company Chubb* [2020] UKSC 38, that treated an express choice of the governing law in a matrix contract as an implied choice of governing law of an arbitration agreement comprised within it.

253. Arbitration Act, 2025 § 5 (U.K.).

254. *Id*. at § 10.

255. Federal Arbitration Act, 9 U.S.C. § 2 (2026).

256. Michael Daly & Mark Taticchi, *Supreme Court Confirms Federal Arbitration Act's Broad Preemption of State Law*, FAEGRE DRINKER (May 16, 2027) https://www.faegredrinker.com/en/insights/publications/2017/5/supreme-court-confirms-federal-arbitration-acts-broad-preemption-of-state-law [https://perma.cc/K93S-LUCJ].

257. Federal Arbitration Act, 9 U.S.C. § 2 (2026).

258. *Id.* at § 9.

259. *Id.* at § 10.

in situations involving metaverse disputes when the integrity of the arbitration process is called into question.[260]

3. India's Arbitration and Conciliation Act, 1996

India's Arbitration and Conciliation Act of 1996 is based on the UNCITRAL Model Law on International Commercial Arbitration, and it governs both local and international arbitration.[261] The Act seeks to promote arbitration as an effective and efficient method of conflict resolution, with an emphasis on reducing court intervention and maintaining the enforceability of arbitration agreements and awards.[262]

There are two key provisions relevant to the metaverse. Section 7 defines an arbitration agreement and provides for written agreements.[263] Although the 2015 amendment enables agreements conveyed using "electronic means," the phrase is not precisely defined in the Act, generating uncertainty over the application of blockchain-based agreements.[264] Section 34 allows for the set aside of an arbitration award on certain grounds, including public policy, which may be applicable in circumstances where the award is based on transactions or contracts that contradict standard legal notions.[265] Contracts in the metaverse can involve novel transactions such as digital assets, NFTs, virtual property, and smart contracts that may not align neatly with existing laws or legal standards.[266] An award enforcing such contracts could conflict with fundamental legal principles or public policy.[267]

C. Legal Challenges of Applying Arbitration Laws to Metaverse Disputes

1. Jurisdictional issues

One of the most difficult issues in applying standard arbitration laws to the metaverse is defining jurisdiction. The arbitral seat is critical in defining the legal framework for the arbitral proceedings.[268] It can be characterized as the legal home of the arbitration and provides its supporting legal framework.[269] Transactions in the metaverse can take place between parties from all over the world,

260. *See id.* (noting the absence of anything in section 10 to preclude it from applying in metaverse arbitration proceedings).

261. Arbitration and Conciliation Act, 1996 (Act. No. 26/1996) (India).

262. *Id.*

263. *Id.* at § 7.

264. *Id.* at § 7(4)(b), amended by Arbitration and Conciliation (Amendment) Act, 2015, No. 3 of 2016, (Dec. 31, 2015) (India).

265. Arbitration and Conciliation Act 1996 § 34(b)(2).

266. *See* Jesse Valente, *Governing the Metaverse*, 9 U. CIN. INTELL. PROP. & COMPUT. L.J. 135, 135–36 (2024) (discussing the intersection of technology and law in the metaverse).

267. *See id.* at 139 (exploring the jurisdictional challenges that stem from the metaverse).

268. *Id.* at 139–40.

269. See Yeshnah D. Rampall & Ronán Feehily, *The Sanctity of Party Autonomy and the Powers of Arbitrators to Determine the Applicable Law: The Quest for an Arbitral Equilibrium*, 23 HARV. NEGOT. L. REV. 345, 387–88 (2018) (exploring this concept in depth).

without the need for physical presence or a defined legal domicile.[270] This creates significant considerations about which jurisdiction's laws govern the arbitration agreement and the arbitration procedure itself.[271] Jurisdiction in the metaverse is a big concern because virtual activities transcend national borders.[272] The issue of which legal system applies to disputes in the metaverse may be difficult to determine and there is uncertainty over how jurisdictional norms will be applied in the metaverse context.[273] Such concerns emanate from a number of different considerations. The metaverse is a borderless environment, a worldwide platform where users from many jurisdictions interact, making it impossible to discern which legal system is in charge of disputes.[274] Many metaverse systems are decentralized, meaning they run on blockchain technology without a central governing body, which complicates determining jurisdiction.[275] The concept of a virtual presence, in which users communicate via avatars and digital representations, calls into question traditional notions of physical presence and territoriality in deciding jurisdiction.[276]

The Competence-Competence doctrine permits an arbitral tribunal to determine its own jurisdiction,[277] and it is especially applicable in the metaverse. However, problems occur when parties contest the legality of an arbitration agreement made using digital or smart contracts.[278] For example, a smart contract may automatically invoke an arbitration clause without the parties' explicit approval, resulting in conflicts over the tribunal's jurisdiction.[279]

In traditional arbitration, parties typically choose a governing law for their contract.[280] In the metaverse, where contracts can be implemented via smart contracts on a blockchain, the choice of law becomes more complex.[281] Because

270. *See* Valente, *supra* note 268, at 139 (discussing the global and complex nature of the Internet).

271. *Id.* at 141.

272. *Id.*

273. *Id.*

274. *Id.*

275. Ana Mercedes López Rodríguez, *Consumer Protection in Blockchain-Based Metaverses: A Comparative Study of Cross-Border Legal Gaps and Platform Governance*, FRONTIERS, Oct. 20, 2025, at 1–2, https://www.frontiersin.org/journals/blockchain/articles/10.3389/fbloc.2025.1675735/full [https://perma.cc/ET3A-ACT7].

276. *See* Bhatty Saadia, *Competence-Competence*, JUS MUNDI (Oct. 28, 2025), https://jusmundi.com/en/document/publication/en-competence-competence [https://perma.cc/G3VA-PSQQ] (describing the traditional arbitration process).

277. Ronán Feehily, *supra* note 118, at 35.9

278. Ping Han, *AI-Powered Digital Arbitration Framework Leveraging Smart Contracts and Electronic Evidence Authentication*, NATURE: SCIENTIFIC REPORTS 1 (2025), https://www.nature.com/articles/s41598-025-21313-x [https://perma.cc/HP5X-2HGF].

279. Brown, *supra* note 109.

280. Arpita Chakravorty, *Why Governing Law Clauses Matter More Than Most Teams Realize*, SIRION (Feb. 6, 2026), https://www.sirion.ai/library/contract-clauses/governing-law-in-contracts/ [https://perma.cc/4N6M-CBRJ].

281. *See* Dorna Hakimelahi, *The Nature and Enforceability of Smart Contracts in the Metaverse: A Legal Analysis and Implementation Challenges*, 5 LEGAL STUDS. DIGIT. AGE 1, 3 (2026) (discussing the legal difficulties that come with enforcing smart contracts).

blockchain technology is decentralized, transactions may not be tied to a certain jurisdiction, making determining which legal framework to use challenging.[282]

There are also issues arising from smart contracts with arbitration embedded.[283] The implementation of an arbitral ruling straight into a blockchain poses a variety of complicated legal and policy concerns.[284] For example, the transition to digital arbitration raises significant questions regarding how these decisions hold up against traditional legal standards. One major concern is whether an "on-chain" resolution carries the weight of a final judgment, effectively preventing the parties from reopening the same case in a physical court later on.[285] Furthermore, while standard international laws usually require an arbitrator to provide a detailed written explanation for their ruling, it is unclear if a simplified or automated blockchain result would satisfy this requirement.[286] This leads to the broader issue of legal oversight; because blockchains are global, it is difficult to determine which country's specific arbitration laws apply to the process. Without a clear legal home for these disputes, it becomes very challenging for a person to appeal or contest a decision if they believe the arbitrator acted unfairly or made a mistake.[287]

To overcome these issues of jurisdiction, at least as an interim measure, would be to permit a person to commence proceedings before the courts of their residence or place of business. While the forum and the law of the claimant's domicile/place of business have historically been seen as unsatisfactory private international law connecting factors for contractual disputes, it seems reasonable that this exception is appropriate in relation to metaverse-related disputes in the appropriate context, in order to ensure access to fairness and connect the transaction to a legal order in relevant situations.[288] The High Court of Singapore adopted this solution in the case of *Janesh s/o Rajkumar v. Unknown Persons*.[289] The Court granted a worldwide freezing injunction preventing the sale or transfer of an NFT, setting a significant precedent for the recognition of NFTs as legal property in Singapore.[290] This followed the approach in England and Wales.[291]

282. Yueh-Ping Yang, *When Jurisdiction Rules Meet Blockchain: Can the Old Bottle Contain the New Wine*, 6 STAN. J. BLOCKCHAIN L. & POL'Y. 137, 147 (2023).

283. *See* text accompanying notes 286–89 (elaborating on these issues).

284. *See generally* Yueh-Ping Yang, *The Crowd's Wisdom in Smart Contract Dispute Resolution: Is Crowdsourced Dispute Resolution Arbitration?*, 15 CONTEMP. ASIA ARB. J. 175 (2022) (considering the policy implications of implementing blockchain into dispute resolution methods); Brown, *supra* note 109.

285. Brown, *supra* note 109.

286. *Id.*

287. *Id.*

288. Vahid Rezadoost, et al., *Arbitration Tech Toolbox: Applicable Law, Choice of Courts and Enforcement Issues in Metaverse Disputes*, KLUWER ARB. BLOG (Sept. 27, 2023), https://legalblogs.wolterskluwer.com/arbitration-blog/arbitration-tech-toolbox-applicable-law-choice-of-courts-and-enforcement-issues-in-metaverse-disputes/ [https://perma.cc/K4Z2-BLKG]*; see generally* Rampall & Feehily, *supra* note 271(exploring the benefits of international arbitration).

289. Janesh s/o Rajkumar v. Unknown Persons [2022] SGHC 264 (Sing.).

290. *Id.* at ¶ 92.

291. The Singapore High Court's approach appears to follow an international trend towards finding that NFTs give rise to a proprietary interest. In *Lavinia Deborah Osbourne v (1) Persons Unknown (2) Ozone Networks Inc. trading as Opensea* [2022] EWHC 1021 (Comm), the English courts similarly recognised that there was at least "a realistically arguable case" that NFTs should be treated as legal property. That case also involved

However, the judgment related to an urgent *ex-parte* injunction application, and the Court made it clear that a different conclusion may be reached where full arguments were made on the issue.[292] Until such time as there are clearer laws and regulations governing metaverse disputes, the case demonstrates the willingness of the courts to adopt a pragmatic approach.[293]

2. Enforcement of Arbitral Awards

Enforcing an arbitral award in the metaverse presents unique issues, especially when the parties are pseudonymous, the assets are digital, and the transaction is decentralized.[294] The Convention on the Recognition and Enforcement of Foreign Arbitral Awards (the New York Convention) is an important international instrument that helps enforce arbitral awards across borders.[295] While the New York Convention provides a strong foundation for enforcing awards, its application to the metaverse is not straightforward.[296] For example, identifying the legal body the award is to be enforced against can be difficult when the entities involved in the dispute use pseudonyms.[297]

In the metaverse, awards can include digital assets like cryptocurrencies or NFTs.[298] Enforcing an award requiring the transfer of these assets can be challenging, especially if the other party refuses to comply.[299] The New York Convention may only be applicable when conflicts are addressed off-chain or on-chain issues deal with off-chain consequences, such as insufficient enforcement due to a breach, fraud, or mistake.[300] Similarly, it may possibly apply if the conflicts are decided on-chain but are then converted to an off-chain award.[301]

Article V(1)(b) of the New York Convention provides a basis for refusal of enforcement of an award if the party against whom the award is invoked was not given proper notice of the appointment of the arbitrator or of the arbitration proceedings, or was otherwise unable to present their case.[302] However, this safeguard is rendered ineffective for awards granted via self-executing smart

an application for an injunction. Kushal Gandhi, et al., *NFTs as Property - Singapore and the UK*, CMS LAW NOW (Dec. 7, 2022), https://www.lexology.com/library/detail.aspx?g=0e394784-60ce-4a2e-b34b-8ae4297e7e2 [https://perma.cc/D3XY-AJBZ].

292. Janesh, [2022] SGHC 264 ¶ 69.

293. *See id.* (demonstrating this principle).

294. Rodríguez, *supra* note 277.

295. *See* Rampall & Feehily, *supra* note 271, at 356–57 (explaining the background and purpose of the New York Convention).

296. Arijit Sanyal, *Arbitration Tech Toolbox: Can the New York Convention Stand the Test of Technology Posed by Metaverse Awards?*, KLUWER ARB. BLOG (Dec. 20, 2022), https://legalblogs.wolterskluwer.com/arbitration-blog/arbitration-tech-toolbox-can-the-new-york-convention-stand-the-test-of-technology-posed-by-metaverse-awards/ [https://perma.cc/867Y-LF52].

297. Yasmine Ellul, *The Future of Dispute Resolution: Enforcing Metaverse-Related Blockchain Arbitral Awards*, CHAMBERS & PARTNERS (Jan. 24, 2025), https://chambers.com/articles/the-future-of-dispute-resolution-enforcing-metaverse-related-blockchain-arbitral-awards [https://perma.cc/2FSS-EBHE].

298. *Id.*

299. *See generally id.* (describing how the anonymity of parties complicates initiation and enforcement).

300. *See generally id*. (describing the limits of the New York Convention in arbitrating metaverse disputes).

301. *Id*.

302. Convention on the Recognition and Enforcement of Foreign Arbitral Awards, art. V(1)(b), June 10, 1958, 21 U.S.T. 2517, 330 U.N.T.S. 3.

contracts, as their enforcement is automatic and does not rely on traditional recognition methods.[303]

Article II(2) of the New York Convention defines an "agreement in writing" for the purpose of enforcing arbitration agreements.[304] It notes that this can include an arbitral clause in a contract, which specifies that disputes will be addressed through arbitration, a separate arbitration agreement, in which parties sign a separate document explicitly agreeing to arbitration, and the exchange of communications through letters or a telegram.[305] The 2006 UNCITRAL Recommendation on the Interpretation of Articles II and VII of the New York Convention provides guidance on how to understand, interpret and apply this provision.[306] The recommendation emphasizes that the term "agreement in writing" in Article II should be read broadly.[307] It confirms that this covers not just traditional written agreements, but also those made using electronic means, such as emails or data messages, if they are available and usable for future reference.[308] It emphasizes that the agreement should be interpreted to encompass all sorts of written communications demonstrating the parties' assent to arbitration, including those transmitted via current technological channels.[309]

The UNCITRAL Model Law on International Commercial Arbitration provides a legal framework for arbitration that states can adopt.[310] Originally drafted in 1985, it was revised in 2006.[311] Article 7 covers the definition and form of an arbitration agreement and provides two options for states to choose between.[312] Option 1 states the condition that an arbitration agreement be in writing is met by an electronic communication if the information contained therein is obtainable so as to be useable for subsequent reference.[313] Electronic communication is any communication that the parties make by means of data messages.[314] 'Data

303. See *Blockchain, Smart Contracts and Alternative Dispute Resolution*, GIDE, (Jul. 5, 2023), https://www.gide.com/en/news-insights/blockchain-smart-contracts-and-alternative-dispute-resolution/ [https://perma.cc/5WP9-SPBU] (explaining decentralized and on-chain arbitration can come under *lex cryptographia*. *Lex Cryptographia* is a new form of law emanating from blockchain technology, where legal frameworks are encoded into algorithms and executed automatically. It is rooted in the decentralized and trustless nature of blockchain systems, that aim to eliminate the need for traditional intermediaries such as governments, courts, or banks).

304. Convention on the Recognition and Enforcement of Foreign Arbitral Awards, art. II(2), June 10, 1958, 21 U.S.T. 2517, 330 U.N.T.S. 3.

305. Pratyush Panjwani & Emily Hay, METAVERSE DISPUTE RESOLUTION COLLOQUIUM (Mar. 24, 2023), https://www.digitallawcenter.ch/sites/default/files/inline-files/metaverse-dispute-resolution-colloquium-presentation-pratyush-panjwani-and-emily-hay-24-mar-2023.pdf [https://perma.cc/Z9UU-APUN].

306. *Recommendation regarding the interpretation of article II, paragraph 2, and article VII, paragraph 1, of the Convention on the Recognition and Enforcement of Foreign Arbitral Awards, done in New York, 10 June 1958 (2006)*, UN COMM'N ON INT'L TRADE L. (last visited Feb. 2, 2026), https://uncitral.un.org/en/texts/arbitration/explanatorytexts/recommendations/foreign_arbitral_awards [https://perma.cc/HN52-SMRB].

307. *Id.*

308. *See id*. (noting that the "circumstances described therein are not exhaustive").

309. *See id*. (clarifying that Art. II(2) is broad).

310. *UNCITRAL Model Law on International Commercial Arbitration (1985), with amendments as adopted in 2006*, UN COMM'N ON INT'L TRADE L., https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/19-09955_e_ebook.pdf [https://perma.cc/254B-WU49] (last visited Feb. 2, 2026).

311. *Id.*

312. *Id.* at 4.

313. *Id.*

314. *Id.*

message' implies data generated, transferred, received, or collected by electronic, magnetic, or similar methods, including, but not restricted to, electronic data interchange (EDI).[315] The law recognizes that electronic communications can satisfy the writing requirement for an arbitration agreement.[316] This indicates that if the information is stored in a fashion that can be retrieved and referenced later, it qualifies as "in writing."[317] Examples include Automated Electronic Exchanges of Business Information.[318]

From the above discussion it can be seen that if the parties to the dispute are able to satisfy the criteria of writing, to the extent that the communication is obtainable and ready to be used for further reference, then the arbitration clause embedded in a smart contract is valid.[319] This ultimately implies that the award can be enforced under the New York Convention subject to any further requirements in the case.[320]

However, there are concerns regarding due process.[321] As noted above, Article V(1)(b) of the New York Convention addresses a basic issue in arbitration concerning due process.[322] It specifies that acceptance and enforcement of an arbitral decision may be denied if the party against whom the award is claimed was not given adequate notice of the arbitrator's appointment or the arbitration proceedings or was otherwise unable to plead their case.[323]

Notices in the metaverse can be transmitted in a variety of digital formats, such as in-game messages, emails, or other electronic forms.[324] Ensuring that all parties receive and have access to these alerts is critical. Issues may develop if the digital communication channels utilized are unreliable or if technical impediments prohibit parties from receiving alerts.[325] Ensuring that the intended recipient of the notice is truly the correct party can be more difficult in virtual contexts where identities can be masked or pseudonymous.[326]

The Amsterdam Court of Appeal dealt with an internet arbitration case involving Bitcoin loans.[327] The case involved a disagreement about cryptocurrencies and smart contracts.[328] The court determined that the arbitration proceedings

315. *Id.* at 4–5.
316. *Id.*
317. *See generally id.* (explaining how the term "in writing" has a broad definition").
318. *See id.* (establishing a broad definition of "electronic communication").
319. *See generally id.* (explaining how a arbitration clause being "in writing" is necessary to validate it).
320. *See id.* (creating requirements for a valid agreement in writing).
321. Ellul, *supra* note 299.
322. *See generally Article V(1)(b), supra* note 304 (allowing enforcement refusal if proper notice was not given or the party was unable to present their case).
323. *Id.*
324. *Notice of Arbitration by SMS: Efficiency vs. Fairness,* ACERIS LAW LLC (May 9, 2025), https://www.acerislaw.com/notice-of-arbitration-by-sms-efficiency-vs-fairness [https://perma.cc/B7MA-WHNB].
325. *Id.*
326. See Michael Buchwald, *Smart Contract Dispute Resolution: The Inescapable Flaws of Blockchain-Based Arbitration*, 168 U. PA. L. REV. 1369, 1378–79 (2020).
327. Aurelia Menezes, *Crypto-Asset Disputes And The Role Of Arbitration: Emerging Trends And Case Law*, MONDAQ (Jan. 5, 2026), https://www.mondaq.com/india/fin-tech/1724946/crypto-asset-disputes-and-the-role-of-arbitration-emerging-trends-and-case-law [https://perma.cc/AQZ9-8YHR].
328. Aditya & Kumar, *supra* note 193, at 466.

violated the principle of *audi alteram partem*—the right to be heard.[329] The court determined that enforcing the arbitration award would be contrary to public policy.[330] The case raised legal concerns about the ambiguous nature of blockchain-based arbitration decisions and their enforceability.[331] Overall, this ruling demonstrates the problems courts face when dealing with issues resulting from new technologies such as cryptocurrencies and smart contracts, particularly when it comes to the validity and enforceability of arbitration processes performed wholly on a blockchain.

3. Public Policy Concerns

Article V(2)(b) of the New York Convention provides that recognition and enforcement of an arbitral award may be refused in a country where recognition or enforcement would be contrary to the public policy of that country.[332] This falls in line with the argument that public policy issues are relevant to the country where enforcement is sought, rather than a broader or transnational norm or understanding of public policy.[333] The phrase "public policy" is not defined specifically in the New York Convention; national courts must consequently interpret its meaning within their respective legal frameworks.[334] This has resulted in a diversity of interpretations, many of which are affected by the country's legal, ethical, and social standards.[335]

Under Article V(2)(b) of the New York Convention, courts may refuse to enforce arbitral awards where enforcement would violate local laws, such as those prohibiting the usage of cryptocurrency.[336] For example, if a dispute develops because of a virtual real estate transaction in the metaverse involving cryptocurrency payments in a region where such transactions are prohibited, the enforcement of any subsequent arbitral award may be contested on public policy grounds.[337] Courts may decide that recognizing and enforcing the award would contradict the fundamental legal principles of that jurisdiction, thus claiming the public policy exception.[338]

The case of *Gao Zheyu v. Shenzhen Yunsilu Innovation Development Fund Enterprise (L.P.) and Li Bin* exemplifies how public policy considerations

329. *See id.* at 467 (noting the agreement unilaterally referred the case to arbitration and that the defendant did not have notice).

330. *Id.*

331. *Id.* at 466.

332. Convention on the Recognition and Enforcement of Foreign Arbitral Awards, art. V(2)(b), June 10, 1958, June 10, 1958, 21 U.S.T. 2517, 330 U.N.T.S. 3.

333. Margaret Moses, *Public Policy: National, International and Transnational*, KLUWER ARB. BLOG (Nov. 12, 2018), https://arbitrationblog.kluwerarbitration.com/2018/11/12/public-policy-national-international-and-transnational/ [perma.cc/CC4U-2G8J].

334. *Id.*

335. *Id.*

336. Convention on the Recognition and Enforcement of Foreign Arbitral Awards, art. V(2)(b), June 10, 1958, June 10, 1958, 21 U.S.T. 2517, 330 U.N.T.S. 3.

337. *See id.* (providing an exception to enforcement if the award violates public policy).

338. Moses, *supra* note 335.

around cryptocurrency come into play.[339] In this case, the Shenzhen Intermediate People's Court decided against the enforcement of a contract involving cryptocurrency, saying that such transactions violated China's national policy that prohibited cryptocurrencies.[340] This decision establishes a precedent for how courts, with similar public policies, might handle similar issues concerning digital currencies.[341]

However, there have been enforcement issues in jurisdictions where cryptocurrencies are not prohibited.[342] A ruling of the Court of Appeal of Western Central Greece involved the inability to enforce an arbitral award that required the payback of a bitcoin loan.[343] The court's refusal of enforcement was based on public policy concerns about cryptocurrencies' legitimacy as a legal currency.[344] The decision underlines the hazards connected with cryptocurrency, including tax evasion, fraud, and other possible social consequences.[345] The decision underscores a larger issue of enforcement challenges in areas where cryptocurrencies are not completely regulated or recognized, but not openly prohibited.[346]

Beyond public policy and subject matter arbitrability concerns, metaverse arbitration awards face procedural and formal hurdles under the New York Convention.

Due Process Requirements: Article V(1)(d)

Article V(1)(d) allows refusal if a party was not given proper notice of the appointment of the arbitral tribunal or proceedings or was unable to present their case.[347] In metaverse arbitration, parties operate through pseudonymous avatars (e.g., "CryptoLawyer123") rather than real identities.[348] Courts require proof that the correct party received notice and participated.[349] Without verifiable identity linking avatars to real persons, enforcement courts may reject awards, questioning whether due process was satisfied.[350]

339. Aditya & Kumar, *supra* note 193, at 466 (citing Gao Zheyu v. Shenzhen Yunsilu Innovation Development Fund Enterprise (L.P.) and Li Bin, Yue 03 Min Te No. 719 (Shenzhen Interm. People's Ct. 2018) (China)).

340. *Id.*

341. *Id.*

342. *Id.* (citing Court of Appeal of Western Central Greece, 88/2021 (unreported) (2021) (Greece).

343. *Id.*

344. *Id.*

345. *Id.*

346. *Bitcoin and public policy in international arbitration enforcement*, NORTON ROSE FULBRIGHT (Jun. 8, 2022), https://www.nortonrosefulbright.com/fr-ca/inside-turkiye/blog/2022/06/bitcoin-and-public-policy-in-international-arbitration-enforcement [https://perma.cc/5SKP-2GP5].

347. Convention on the Recognition and Enforcement of Foreign Arbitral Awards, art. V(1)(b), June 10, 1958, 21 U.S.T. 2517, 330 U.N.T.S. 3.

348. *Avatar v Avatar: A Look at International Arbitration within the Metaverse*, LEXOLOGY (Feb. 22, 2022), https://www.lexology.com/library/detail.aspx?g=6881bcfb-8853-4f74-9c69-aa218852848d [perma.cc/P82J-SSW2].

349. Convention on the Recognition and Enforcement of Foreign Arbitral Awards, art. V(1)(b), June 10, 1958, 21 U.S.T. 2517, 330 U.N.T.S. 3; Denton Nichols & Olivia Fox, *Notices of arbitration: getting off on the right foot*, NORTON ROSE FULBRIGHT (Nov. 2022), https://www.nortonrosefulbright.com/en/knowledge/publications/93cacba7/notices-of-arbitration-getting-off-on-the-right-foot [perma.cc/YG6L-QEY5].

350. *See* Convention on the Recognition and Enforcement of Foreign Arbitral Awards, art. V(1)(b), June 10, 1958, 21 U.S.T. 2517, 330 U.N.T.S. 3 (requiring the party's proper notice and participation).

Formal Requirements: Article IV

Article IV requires arbitral awards to be in writing, signed by arbitrators, and contain the award date and place of arbitration.[351] Smart contract awards exist purely as blockchain code, not traditional documents.[352] Courts expect PDF files with signatures, not computer code.[353] The absence of physical signatures, traditional formatting, and a clear "place of arbitration" (virtual versus physical seat) creates uncertainty about whether code satisfies New York Convention formalities.[354]

These procedural gaps complement the substantive concerns under Articles V(1)(b) and V(2)(b) already discussed, presenting a comprehensive challenge to metaverse award enforcement.[355]

D. Case Studies and Precedents

Case studies and legal precedents provide essential information about how courts and arbitral tribunals have handled disputes arising out of the metaverse and other virtual environments.[356] Reviewing these examples provides a better understanding of the legal issues that occur during virtual business transactions, as well as the function of arbitration in settling these conflicts.[357] This part will look at the relevant case studies and precedents with an emphasis on concerns such as jurisdiction, smart contract enforceability, and the treatment of digital assets.[358]

In *My Big Coin Pay, Inc. v. Commodity Futures Trading Commission (CFTC)*, the CFTC filed an enforcement action against My Big Coin Pay, Inc., a cryptocurrency company, citing fraud and misuse of funds.[359] The decision was noteworthy because the court found that cryptocurrencies in at least some cases constitute commodities under the Commodity Exchange Act, placing them under the CFTC's regulatory authority.[360] The case has significant relevance for the metaverse in terms of regulatory classification.[361] The court's decision to define cryptocurrencies as commodities has consequences for how digital assets

351. *Id.* at art. IV.

352. Fabio Bassan & Maddalena Rabitti, *From Smart Legal Contracts to Contracts on Blockchain: An Empirical Investigation*, 55 COMPUT. L. & SEC. REV.: INT'L J. TECH. L. & PRAC. 1, 3 (2024).

353. *See* Aditya & Kumar, *supra* note 193, at 468–69 (explaining courts will accept contracts with digital signatures, but smart contracts do not meet the requirement for digital signatures).

354. *Id.*

355. *See supra* Part III.C.2–3 (discussing these other provisions of the New York Convention).

356. *See* Adel Salem AlLouzi & Khaled Mohammad Alomari, *Adequate Legal Rules in Settling Metaverse Disputes: Hybrid Legal Framework for Metaverse Dispute Resolution (HLFMDR)*, 7 INT'L J. DATA & NETWORK SCI. 1627, 1628 (2023) (discussing case studies and legal frameworks regarding dispute resolution in the metaverse).

357. *Id.*

358. *See infra* Part III.D (examining case studies and precedent).

359. CFTC v. My Big Coin Pay, Inc., 334 F. Supp. 3d 492, 494 (D. Mass. 2018).

360. *Id.* at 498.

361. U.S. COMMODITY FUTURES TRADING COMM'N, RELEASE NO. 7820-18, FEDERAL COURT FINDS THAT VIRTUAL CURRENCIES ARE COMMODITIES (OCT. 3, 2018), https://www.cftc.gov/PressRoom/PressReleases/7820-18 [https://perma.cc/7NET-22V5]

are regulated in the metaverse.[362] The court effectively gave the CFTC legal authority to regulate digital assets.[363] Metaverse tokens such as NFTs or in-game currencies could now fall under CFTC oversight.[364] This may have an impact on the need for metaverse platforms to redesign or register their token to meet CFTC compliance requirements.[365] It may also mean that CFTC will prosecute for suspected fraud involving metaverse tokens.[366]

This case emphasizes the necessity of understanding how digital assets are defined under various legal regimes, as this could influence how they are treated in arbitration. The decision also emphasizes the importance of clear arbitration clauses in contracts involving digital assets. As the legislative landscape for cryptocurrencies and other digital assets evolves, arbitration agreements must be carefully drafted to guarantee they are legally binding.

In *Bitcoin Manipulation Abatement LLC v. FTX Trading Ltd*., Bitcoin Manipulation Abatement LLC filed a complaint, alleging market manipulation by FTX, a cryptocurrency exchange.[367] The plaintiff claimed damages under the Commodity Exchange Act.[368] While the case did not go to arbitration, it does illustrate the possibility of conflicts involving digital assets being handled through arbitration, given the cross-border nature of the parties and the complicated legal landscape around cryptocurrencies.[369]

From the above discussion, it is clear that the inclusion of arbitration clauses in contracts for virtual business transactions creates both opportunities and difficulties for corporate entities. At first blush, it may appear that arbitration, with its reputation for being a faster, more flexible, and less expensive alternative to litigation, is ideal for the rapid, cross-border nature of virtual business.[370] However, a deeper look reveals that, while there are obvious benefits, there are also a number of practical concerns that commercial entities must consider.[371] In virtual business transactions that frequently cross many jurisdictions, settling disputes through arbitration can help circumvent the lengthy and expensive procedures associated with traditional judicial systems.[372] This is especially beneficial for technology-driven businesses functioning in the digital

362. *See My Big Coin Pay*, 334 F. Supp. 3d at 496–98 (allowing cryptocurrency to be classified as a commodity).

363. *See id.* at 497–98 (analyzing how cryptocurrency can be a commodity).

364. *See* CFTC, *Customer Advisory: Understand the Risks of Virtual Currency Trading* (Dec. 15, 2017), https://www.cftc.gov/LearnAndProtect/AdvisoriesAndArticles/understand_risks_of_virtual_currency.html [https://perma.cc/8LRQ-XSNC] (explaining why the CFTC views virtual currency as risky).

365. *See id.* (advising consumers to verify sellers of virtual currencies are registered with the CFTC).

366. U.S. COMMODITY FUTURES TRADING COMM'N, *supra* note 363.

367. Complaint at 2, Bitcoin Manipulation Abatement LLC v. FTX Trading Ltd., No. 4:19-cv-07245 (N.D. Cal. 2019).

368. *Id.* at 4.

369. *See id.* (showing the case was filed in federal district court)*;* Oleg Shaulko, *Arbitration, Crypto Assets, and the Courts: Adapting Dispute Resolution for a Digital Economy* (Jan. 16, 2026), KENNEDYS, https://www.kennedyslaw.com/en/thought-leadership/article/2026/arbitration-crypto-assets-and-the-courts-adapting-dispute-resolution-for-a-digital-economy/ [https://perma.cc/Z33Z-A2JV].

370. Shaulko, *supra* note 371; Feehily, *supra* note 15, at 4–8.

371. Shaulko, *supra* note 371; Feehily, *supra* note 15, at 10, 13.

372. Shaulko, *supra* note 371.

economy.[373] While arbitration can eliminate some of the ambiguities inherent in traditional legal systems, there is still a lack of comprehensive, internationally recognized standards governing arbitration in digital situations.[374] This creates a grey area in which award enforceability, jurisdictional recognition, and even basic procedural standards can change, leaving businesses vulnerable to unanticipated consequences.[375] Arbitration clauses, especially in smart contracts or click-to-accept deals, frequently benefit the party drafting the contract.[376] This can create a power imbalance in which smaller firms or consumers are obliged to accept unfavorable arbitration terms, such as a remote arbitration seat, biased arbitrators, or costly arbitration processes.[377] The enforceability of arbitration agreements and awards remains dependent on off-chain legal systems as discussed in the above cases.[378] The enforceability of digital awards, particularly in cases involving smart contracts or blockchain-based arbitration, may face legal challenges in courts.[379] This may undercut the efficiency and finality that arbitration is designed to bring, especially if a party refuses to comply with an on-chain award.[380]

While arbitration is likely to become more common in virtual commercial transactions, it is not a uniform solution. The legal infrastructure is clearly not in place to make it the panacea for resolving commercial conflict, though it possesses the potential to be in appropriate cases. Before selecting whether to include arbitration clauses, business entities must carefully consider their position, resources, and the specific nature of their virtual transactions, assuring a balance of flexibility, fairness, and enforcement.

373. *Id.*

374. Julien Chaisse, *Arbitration in Cross-Border Data Protection Disputes*, 15 J. INT'L DISP. SETTLEMENT 534, 543 (2024).

375. *See, e.g.*, Joanna Iwanicka, *Electronic Arbitral Awards: A Balancing Act Between Efficiency and Enforceability*, MONDAQ (May 2, 2025), https://www.mondaq.com/unitedstates/arbitration-dispute-resolution/1618508/electronic-arbitral-awards-a-balancing-act-between-efficiency-and-enforceability [https://perma.cc/32CA-SKT5] (noting that e-awards are not widely used).

376. Click-to-accept deals are non-negotiable and have pre-set terms. Users simply accept them without discussion giving the drafter control. *Gone Too Far? Forced Arbitration in Consumer Contracts*, WOLF POPPER LLP (May 7, 2024), https://www.wolfpopper.com/news/gone-too-far-forced-arbitration-in-consumer-contracts [https://perma.cc/3YYF-CRCD].

377. *See* Ronán Feehily, *Neutrality, Independence and Impartiality in International Commercial Arbitration, A Fine Balance in the Quest for Arbitral Justice*, 7 PENN. ST. J.L. & INT'L AFF. 88, 90-94 (2019) (exploring the importance of impartiality in international commercial arbitration,); WOLF POPPER LLP, *supra* note 378.

378. *See* WOLF POPPER LLP, *supra* note 378 (noting the minimal opportunities for appeal).

379. *See* Danrivanto Budhijanto, et al., *Blockchain Arbitration: Roadmap to Recognition and Enforcement of Arbitral Award*, 11 COGENT SOC. SCI. 1,3 (2025), https://doi.org/10.1080/23311886.2025.2536726 (stating that blockchain arbitration is viewed as "incompatible with established legal systems").

380. Feehily, *supra* note 379; Katarzyna Szczudlik, *"On-chain" and "Off-chain" Arbitration: Using Smart Contracts to Amicably Resolve Disputes*, NEW TECH LAW (June 4, 2019), https://newtech.law/en/articles/on-chain-and-off-chain-arbitration-using-smart-contracts-to-amicably-resolve-disputes [https://perma.cc/BL25-V23K]

IV. METAVERSE AS A MEDIUM TO HOLD HEARINGS

Holding arbitrations in the metaverse has the potential to create an interactive and visually rich setting that can improve the arbitration process. Virtual reality can be used to create realistic digital courtrooms or hearing rooms, complete with avatars for the tribunal, parties, and other participants.[381] These virtual environments can be customized to match the unique requirements of each case, such as choosing a location, altering the décor, and including multimedia features like exhibits, movies, and animations to present facts in a more immersive and engaging manner.[382] Aside from visual enhancements, the metaverse can bring new modes of communication and engagement during arbitration.[383] Virtual reality can provide spatial audio, which allows participants' voices to be put in the virtual world, increasing the sense of presence.[384] Virtual tools such as whiteboards, chat functions, and survey features can support real-time interaction and the exchange of data, making the arbitration process more dynamic and interactive.[385] Additionally, avatars can display realistic gestures and facial expressions, facilitating nonverbal interaction, which is crucial for interpreting emotions and intentions.[386]

Conducting arbitration in the metaverse poses several challenges that were reflected in a case determined by the Columbian courts.[387] This was the first legal trial using the metaverse, creating the foundations of the metaverse courtroom, a crucial step towards integrating virtual reality into the judicial process.[388] It took place on February 15, 2023 at the Magdalena Administrative Court, and parties and participants in a traffic dispute appeared as avatars in a virtual courtroom.[389] The magistrate, María Victoria Quiñones Triana, described the encounter as "more real than a video call," highlighting the immersive quality of the metaverse over typical video conferencing services like Zoom.[390]

381. Leith Ben Ammar et al., *VR and AR–The "Virtual" Future of Arbitration?*, DAILY JUS (Apr. 3, 2024), https://dailyjus.com/legal-tech/2024/04/vr-and-ar-the-virtual-future-of-arbitration [https://perma.cc/GDM2-95JP]; *Virtual Reality Reshaping Justice: Applications and Challenges of VR/AR Technology in Modern Courtrooms*, LABORATOIRE DE CYBERJUSTICE, https://www.cyberjustice.ca/2025/02/12/virtual-reality-reshaping-justice-applications-and-challenges-of-vr-ar-technology-in-modern-courtrooms/ [https://perma.cc/6QJJ-5BUZ] (last visited Feb. 14, 2025).

382. *See Virtual Reality Reshaping Justice: Applications and Challenges of VR/AR Technology in Modern Courtrooms*, *supra* note 383 (discussing "sophisticated spatial reconstruction" that can provide "unprecedented clarity and detail").

383. *Metaverse Arbitration: Prospect, Challenges, and Solutions*, MEDIUM (Jan. 30, 2024), https://lasuadrsociety.medium.com/metaverse-arbitration-prospect-challenges-and-solutions-85acc0db7a4a [https://perma.cc/2QSF-AZLP].

384. *Id*.; *Virtual Reality Reshaping Justice: Applications and Challenges of VR/AR Technology in Modern Courtrooms*, *supra* 383.

385. *Metaverse Arbitration: Prospect, Challenges, and Solutions*, *supra* note 385.

386. *Id.*

387. *Colombia's Court Hosts First Legal Trial in the Metaverse*, CONCRET.IO (Mar. 30, 2023), https://www.concret.io/blog/colombias-court-hosts-first-legal-trial-in-the-metaverse [https://perma.cc/BGA9-WHSC].

388. Isabel Woodford, *Colombia court moves to metaverse to host hearing*, REUTERS (Feb. 24, 2023, at 4:08pm CST), https://www.reuters.com/world/americas/colombia-court-moves-metaverse-host-hearing-2023-02-24/ [https://perma.cc/R4M9-S9F5].

389. *Id.*

390. *Id.*

The court focused on a regional transport union's complaint against the police, with avatars representing all parties involved.[391] The discussion lasted around two hours and was livestreamed on YouTube, which sparked significant interest.[392] The court used Meta's Horizon Workrooms, a virtual collaborative platform that enables users to gather in a shared digital environment.[393] This design attempted to improve interaction between participants even while they were physically separated.[394] Despite its novel approach, the hearing received criticism, with reports indicating that over 70% of spectators disapproved of the metaverse format.[395] Concerns were expressed about accessibility, as the equipment required for such experiences is not generally available.[396]

Criticism emanated from several fronts. One of the most common critiques concerns accessibility.[397] As noted above, many potential users cannot obtain or afford the necessary equipment to participate in metaverse experiences, such as virtual reality headsets.[398] For example, a good headset can cost more than $1,500 (USD), discouraging widespread adoption, particularly among those that could benefit from such technology.[399] This lack of access calls into question the metaverse's inclusion and its ability to effectively serve economically diverse populations. The overall experience for users has been criticized as laborious and unfriendly.[400] Many users found the process of interacting with the metaverse tiresome, which contrasts dramatically with the fast-paced tastes of today's digital natives.[401] The expectations of frictionless and engaging experiences had not been delivered, leading to additional disenchantment among potential users.[402]

V. CONCLUSION

The metaverse, consisting of technologies like virtual reality and augmented reality, is transforming the way we connect, do business, and resolve conflicts.[403] As consumers and businesses become more involved in the digital environment, a number of issues have arisen that are arbitrable in nature ranging from intellectual property and economic disagreements to user-to-user conflicts

391. *Id.*
392. *Id.*
393. Camille Bello, *Future of justice: Colombia makes history by hosting first-ever court hearing in the metaverse*, EURONEWS (Mar. 1, 2023), https://www.euronews.com/next/2023/03/01/future-of-justice-colombia-makes-history-by-hosting-its-first-ever-court-hearing-in-the-me [https://perma.cc/6Q7A-FP9A].
394. *See id.* (discussing how the metaverse courtroom looks).
395. Woodford, *supra* note 390.
396. *Id.*
397. *Id.*
398. *See id.* (noting costs).
399. For example, Meta introduced a $1,500 metaverse (VR) headset known as Meta Quest Pro. Zoe Kleinman & Liv McMahon, *Mark Zuckerberg reveals new Quest Pro VR headset*, BBC (Oct. 11, 2022), https://www.bbc.com/news/technology-63200153 [https://perma.cc/C5JY-H6CL].
400. *See* Woodman, *supra* note 390 (discussing issues with the metaverse courtroom).
401. *See id*. (discussing how the metaverse can be the opposite of efficient).
402. *See id.* (discussing how the metaverse can be the opposite of efficient and viewer dissatisfaction with the trial proceeding).
403. *See id.* (discussing a novel courtroom proceeding used via the metaverse).

and data privacy concerns.[404] Smart contracts have become a key component of the metaverse, automating agreements and transactions.[405] Many of these agreements now include arbitration clauses, and several e-commerce platforms have begun to incorporate arbitration terms into their user agreements.[406] New arbitration rules are tailored to the virtual setting, such as the DDRR, JAMS Rules, and EOSIO.[407] On-chain arbitration and various on chain apps have been developed to address these unique challenges.[408] The approach of incorporating arbitration clauses into digital contracts has proven useful for corporations engaged in virtual economic transactions, providing for a fast and efficient dispute resolution process.[409]

A comparative review of arbitration legislation in the United Kingdom, the United States, and India reveals differing degrees of flexibility to technological advancements. More globally, the analysis reveals that some jurisdictions recognize cryptocurrencies and enforce arbitral awards based on them, while others have been more resistant or prohibited them.[410] The New York Convention facilitates the international enforcement of arbitral awards, but it is currently only relevant to off-chain enforcement, leaving a loophole for smart contracts executed wholly on the blockchain.[411] However, the 2006 UNCITRAL Recommendation on the Interpretation of Article II and VII of the New York Convention proves to be favorable, as discussed, in terms of emphasizing that the term "agreement in writing" in Article II should be read broadly.[412] This can encompass all sorts of written communications demonstrating the parties' assent to arbitration, including those transmitted via electronic means, such as emails or data messages, if they are available and usable for future reference.[413] Courts have also begun to address these trends as seen in the jurisprudence discussed.[414]

404. *Protection of Intellectual Property Rights in Digital Content Trade: Workshop Summary Report*, ASIA-PACIFIC ECON. COOP. 7, 14 (Sept. 2021), https://www.apec.org/docs/default-source/Publications/2021/9/Protection-of-Intellectual-Property-Rights-in-Digital-Content-Trade/221_CTI_Protection-of-Intellectual-Property-Rights-in-Digital-Content-Trade.pdf [https://perma.cc/EH28-SS9U]; *Meta-Versus: Part 3 – How will disputes be resolved in the Metaverse?*, SIMMONS & SIMMONS (Aug. 25, 202), https://www.simmons-simmons.com/en/publications/cl794aafg68ec0a43nle87gvt/meta-versus-part-3-how-will-disputes-be-resolved-in-the-metaverse [https://perma.cc/X2T8-9WFT].

405. Abi John, *What Role Do Smart Contracts Play in the Metaverse Economy?*, NASSCOM (Oct. 14, 2025), https://community.nasscom.in/communities/blockchain/what-role-do-smart-contracts-play-metaverse-economy [https://perma.cc/3UJA-DRNT].

406. Gioia Arnone & Marco Giacalone, *Redifining Dispute Resolution Mechanisms for Digital Assets in the Metaverse: Exploring the Role of Blockchain and Emerging Technologies*, 16 EURO. J. L. TECH. 2, 9 (2025).

407. Menezes, *supra* note 329.

408. *See* Brown, *supra* note 109 (discussing a specific example of on-chain and EOSIO).

409. *See id.* (discussing a specific example of on-chain and EOSIO).

410. *See* Kate Gardner & Melissa Ordonez, *Crypto disputes: Adapting to a digital era*, JD SUPRA (Feb. 16, 2026), https://www.jdsupra.com/legalnews/crypto-disputes-adapting-to-a-digital-5069677/ [https://perma.cc/FVN2-9RFX] (discussing cross-border complexity with arbitration and enforcement issues).

411. *See id*. (discussing enforcement issues with the New York Convention).

412. *Recommendation regarding the interpretation of article II, paragraph 2, and article VII, paragraph 1, of the Convention on the Recognition and Enforcement of Foreign Arbitral Awards, done in New York, 10 June 1958 (2006)*, *supra* note 308.

413. *See id.* (discussing why the Recommendation was drafted).

414. *See infra* Part III.D. (discussing relevant cases).

Using metaverse technology in conflict settlement is a viable approach, but it must be carefully considered in terms of legal concerns. It is critical to establish clear criteria for authentication, jurisdiction, conflict resolution and a metaverse specific framework. While difficulties exist, metaverse technology's potential to revolutionize arbitration methods for virtual corporate transactions cannot be denied. Notwithstanding the concerns discussed, the advent of the first virtual dispute resolution process to take place in the metaverse[415] demonstrates the potential for this approach to be improved by addressing the concerns raised and employed effectively to resolve arbitral disputes.

Arbitration presents enormous potential as a future mechanism for resolving disputes in the metaverse. However, the current legal framework is inflexible, making it difficult to manage these new types of conflicts effectively. Arbitration terms in smart contracts or within the metaverse platforms, favor the parties that drafted them flexibly, particularly if they foresaw concerns such as choice of seat and applicable legislation.[416] This can be a significant disadvantage for the other party, especially if they want to contest the award in a country that still follows traditional legal principles.[417] Arbitration's full potential in the metaverse requires a concentrated effort to design flexible norms that consider the unique elements of this digital environment. This includes assuring equal access to technology, developing globally agreed standards for on-chain arbitration, and amending international conventions to include blockchain-based awards. Only then can arbitration be an efficient and equitable means of settling conflicts in the constantly growing metaverse.

415. Woodford, *supra* note 390.
416. *See* text accompanying notes 378–79 (discussing terms in favor of the drafter).
417. *Id.*