CryptoArt NFTs and Copyright: Bridging the Gap between the Practice and the Law

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Abstract

CryptoArt is revolutionising how digital artists protect and monetise their works. However, the position of non-fungible tokens (NFTs) and CryptoArt within copyright law remains unclear. A lack of certainty in relation to rights, infringement and platform liability is creating inconsistency between NFT platforms and consumer confusion. Based on case study evidence from the empirical research of six NFT platforms, together with doctrinal and theoretical analysis, this thesis recommends how copyright law might, and should, be interpreted to provide legal certainty for the CryptoArt movement

This thesis concludes how, within copyright law, NFTs could be classified as tangible CryptoAssets, thereby permitting the application of the exclusive distribution right to CryptoArt. This would provide legal certainty and clarity for the transfer of CryptoArt, the better protection and enforcement of copyright for digital artists, and clarify issues of liability for NFT platforms, so increasing consumer confidence and protection.

Such a position is required to properly reflect the current practice of NFT platforms, legalise the minting and trading via secondary markets of CryptoArt, future-proof the law for further technological progress and bridge the gap that currently exists between the practice and the law. Such development is necessary to provide equality for digital artists with their non-digital counterparts, a high level of protection for rightsholders, and to further encourage business and technological development.

Whilst this position has implications for NFTs generally as well as property law, the doctrine of digital exhaustion, the creative industries and beyond, this thesis argues that such a direction of travel is inevitable and fundamental to the development of blockchain technology and NFTs. Copyright is constantly evolving and NFTs are the latest technology to challenge its boundaries. This research concludes with how copyright can evolve without regulatory change, thereby providing CryptoArt with the foundation for it to flourish.

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Glossary

Aggregated NFT platform - Consolidates the listings of NFTs from multiple different NFT platforms, allowing users to gain full transparency of the market and buy and sell in bulk without having to interact with each separate platform. This leads to a potential reduction of Gas Fees.

Authenticity - Authentication is the process of proving the correct authorship i.e., that an artwork has been created by who it says it has.

Bitcoin - The poster child for CryptoCurrency. Archetypal example of a blockchain protocol, as a public, permissionless, CryptoToken system.

Blockchain – The most common use of Distributed Ledger Technology (DLT), blockchains are a method of recording data in a structured way. Data is structured in a literal chain of timestamped "blocks", with each block cryptographically linked or "chained" to the preceding block.

Burn - Whilst an NFT always remain on the blockchain, it can be removed from circulation, i.e., "destroyed", by sending it to an unusable wallet address that cannot be accessed. Such address is one to which the private key is unknown.

Centralised System - As opposed to a decentralised system, a centralised system relies on a single point of control, providing simplicity but risking a single point of failure.

Cold Wallet - An offline storage device used to store digital assets such as NFTs that is never connected to the internet. More secure than a hot wallet.

Consensus Mechanism - Decentralised systems require a consensus mechanism to reach agreement on the validity of transactions and maintain the integrity of the network. Proof of Work (PoW) and Proof of Stake (PoS) are common consensus mechanisms.

Copymint - The term used for an unauthorised NFT, minted using a copy of either another NFT or a piece of art, digital or otherwise.

CryptoArt - The term used to describe a rare, purely digital artwork i.e., a limited-edition digital artwork that is cryptographically registered as an NFT on a blockchain.

CryptoAsset - Cryptographically secured digital representation of value or contractual rights that uses DLT and can be transferred, stored or traded electronically. A wide definition that encompasses CryptoCurrencies, CryptoTokens and NFTs.

CryptoCollectibles/Collectibles - Unique algorithmically generated NFTs such as CryptoPunks, CryptoKitties or RarePepes. Other examples include trading cards such as NBA Top Shot or in-game items.

CryptoCurrency - Digital representation of value designed to facilitate transactions using blockchain technology.

CryptoToken/Cryptographic Token - Digital representation of an asset or interest that has been tokenised on a blockchain.

Curation - The managing and collating of collections of NFTs and creators. Curated NFTs are selectively chosen and showcased by experts, influential figures or blockchain communities.

Custodial Platform - A custodial platform is centralised. A custodial NFT platform handles the transaction and management of NFTs during a purchase process. It retains the private key to a user's wallet and therefore holds a user's assets i.e., NFTs in custody.

Decentralised Autonomous Organisation (DAO) - An organisation with no central leadership. DAOs are collectively owned and managed by their members, with participation usually through the ownership of a token.

Decentralised Systems - Operate without a central authority or control. They distribute decision making and operations across a network of nodes, ensuring that no single entity has complete control. Such systems often rely on DLT protocols to record transactions across nodes in a transparent and immutable distributed ledger, requiring consensus mechanisms to reach agreement on the validity of transactions and maintain the integrity of the network, e.g. Bitcoin and Ethereum.

Delist - The removal of an NFT from an NFT platform. Delisting an NFT incurs gas fees.

Digital Art - Art that is created, stored and distributed using digital technology.

Digital Asset - An asset that is represented digitally or electronically, including CryptoAssets.

Digital Wallet - Used to store, send and receive CryptoCurrencies and NFTs. Can be either online, so hot e.g., Metamask and Enjin, or offline and cold.

Distributed System - Refers to a network of independent computers, centralised or decentralised, that work together to achieve a common goal. Rather than relying on a single central computer, tasks and data are distributed across multiple machines (nodes) e.g., P2P file sharing systems such as BitTorrent and IPFS.

Discord - An instant messaging platform and a popular place for NFT discussions.

Distributed ledger - A digital store of information or data which is shared i.e., distributed among a network of computers.

Distributed Ledger Technology (DLT) – The technological infrastructure and protocols that allow simultaneous access, validation and record updating across a networked database.

ERC-20 - Ethereum fungible token standard which functions as cash, i.e., two tokens are interchangeable.

ERC-721 - Ethereum token standard that allows for the creation of unique, non-fungible tokens (NFTs).

ERC-1155 - Also known as the Multi-token standard, a standard interface for contracts that manage multiple token types and which can be used to mint limited editions.

ERC-2981 - Ethereum NFT Royalty Standard. A standardised way to retrieve royalty payment information for NFTs to enable universal support for royalty payments across all NFT platforms.

Ethereum - A blockchain protocol with smart contract functionality, and the main platform for NFT projects.

Fungibility - Replaceability. Dollars are fungible because a dollar owed can be paid using any dollar in existence. Something that is non-fungible, like a painting or NFT, is one-of-a-kind.

Gas fees - Fees that blockchain users pay to compensate for the computational resources used to execute transactions. Any transaction, such as a sale, incurs a Gas Fee.

Generative Art - A type of computer-generated digital art produced randomly by autonomous machines or algorithms.

Hot Wallet - Online storage for digital assets such as NFTs, e.g., Metamask. Less secure than an offline cold storage device.

InterPlanetary File System (IPFS) - A distributed means of storing NFT data that is considered superior to storing on an HTTP gateway URL, since the latter is tied to a specific

provider. IPFS addresses allow users to find a piece of content so long as someone on the network is hosting it. During the minting of an NFT, Metadata and other associated files are saved using IPFS.

In Real Life (IRL) - As opposed to online. For example an IRL art gallery, in contrast to an NFT platform.

Lazy Minting - the ability to defer minting costs (i.e., gas fees) until an NFT is actually sold.

Metadata - The collection of data that defines ownership and differentiates one NFT from another. Metadata can be on chain or off-chain. Metadata includes the name, image, description, properties and sale statistics associated with an NFT.

MetaMask - Digital wallet used as a gateway to NFT platforms such as OpenSea and Rarible.

Metaverse - A virtual 3D world where people can interact. Popular blockchain based metaverses include Decentraland and The Sandbox, virtual gaming worlds where users can buy and sell land NFTs.

Minting - The process by which an NFT becomes part of the blockchain. Once an asset is put on the blockchain, it is "minted" as a token and cannot be altered.

Multichain platform - Refers to a NFT platform that allows for the creation and operation of NFTs on multiple independent blockchains.

Non-Fungible Token (NFT) - A uniquely identified digital asset which is minted and stored cryptographically on a blockchain (e.g. Ethereum) as a CryptoToken. Unlike CryptoCurrencies, NFTs are not mutually interchangeable and neither can they be broken down into smaller units. They are indivisible and provably unique. Each NFT is coded to be a unique item by design.

NFT Marketplace/Platform - The terms are to an extent interchangeable. However, an NFT marketplace is taken to be the overall "shop front" that a user accesses and uses to buy, sell and mint NFTs. The term platform is a bit more specific and is used to further describe the functionality of a particular marketplace, for example a marketplace may adopt an aggregated or multichain functionality, so be described as being an aggregated or multichain platform.

Non-custodial Platform - A platform is not dependent on a centralised server, i.e., it is a decentralised platform and trades are conducted without an intermediary. When creators upload an artwork it is sent to IPFS to be hosted by a network of nodes. This means that the artwork will always exist on the IPFS network, independent of the platform's infrastructure. A

non-custodial platform service gives users complete control over their wallets and digital assets.

Off-chain Metadata - Metadata that is stored outside the blockchain.

On-chain Metadata - Metadata that is directly incorporated in a smart contract.

Ordinal NFTs - Offer the ability for users to directly inscribe data into an NFT. For example, Bitcoin Ordinals (BRC-20) allow users to embed data such as digital images onto Satoshis, Bitcoin's smallest unit.

Peer-to-Peer (P2P) - A distributed system that partitions tasks or workloads between peers.

Profile picture (PFP) - A PFP NFT is an NFT that people use as a profile picture. Popular examples include Bored Ape Yacht Club and Cool Cats.

Proof of Stake (PoS) - An example of a consensus mechanism which allows users to validate transactions based on the number of coins they hold and are willing to "stake" for a network's security.

Proof of Work (PoW) - An example of a consensus mechanism which involves users solving complex computational puzzles to add new blocks to the blockchain

Provenance - This describes the chain of ownership of an artwork or NFT.

Secondary Sale - Refers to the selling of a pre-owned NFT after its initial purchase from the creator.

Smart contract - Digital, computable, self-executing contract, where the performance and enforcement of contractual conditions occurs automatically, without the need for human intervention.

Unique - Used to describe an NFT, of which there can only be one, even if one of a limited edition.

Unlockable content - A feature that allows creators to hide content inside an NFT which is only accessible to others after they have purchased the NFT. Examples may include a "hidden" NFT, or a high-resolution copy.

User Generated Content (UGC) - Content created, uploaded and shared by users, transforming their role as consumers from passive spectators (Web 1.0) to active participants (Web 2.0) e.g., images, videos, text, testimonials and software.

Verification - Checking that a creator is who they say they are, and the quality of their work. So, by analogy that their work is authentic and non-infringing.

Web 2.0 - Web 2.0 websites allow users to interact and collaborate, share UGC and participate in a virtual community in contrast to first generation Web 1.0 websites, where users were limited to passively viewing content.

Web 3.0 - Web 3.0 refers to an infrastructure that emphasises decentralisation and the belief that individuals should control their own data, information and identity. No single entity controls the vast majority of the data, and data, value and money can be transferred between network participants without an intermediary.

List of Abbreviations

ARR	Artist's Resale Right.
Berne Convention	Berne Convention for the Protection of Literary and Artistic Works 1886.
The Charter	The Charter of Fundamental Rights of the European Union.
CDPA	Copyright, Designs and Patents Act 1988.
CIs	Creative Industries.
CJEU	Court of Justice of the European Union.
Database Directive	Directive 96/9/EC of the EP and of the Council of 11 March 1996 on the legal protection of databases.
DAO	Decentralised Autonomous Organisation.
DLT	Distributed Ledger Technology.
DMCA	US Digital Millenium Copyright 1988.
DRM	Digital Rights Management.
DSA	Digital Services Act Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market for Digital Services and amending Directive 2000/31/EC (Digital Services Act) OJ L277/1.
DSM Directive	Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on Copyright and Related Rights in the Digital Single Market OJ L 130/92.
DYOR	Do Your Own Research.
Ecommerce Directive	Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market, OJ L 178/1.
EP	European Parliament.

EU	European Union.
FSD	First Sale Doctrine.
InfoSoc Directive	Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society. OJ L 167/10.
IP	Intellectual Property.
IPR	Intellectual Property Rights.
IPFS	InterPlanetary File System.
IRL	In Real Life.
ISSP/ISSPs	Information Society Service Provider / Information Society Service Providers.
ISP/ISPs	Internet Service Provider / Internet Service Providers.
MiCA	Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on markets in crypto-assets.
NFT	Non-fungible Token.
OCSSP/OCSSPs	Online Content Sharing Service Provider / Online Content-sharing Service Providers.
P2P	Peer-to-Peer.
PFP	Profile Picture.
PoW	Proof of Work Consensus Mechanism.
PoS	Proof of Stake Consensus Mechanism.
Resale Right Directive	Directive 2001/84/EC of the European Parliament and of the Council of 27 September 2001 on the resale right for the benefit of the author of an original work of art, OJ L 272 (13 October 2001).
RMI	Rights Management Information.

Software Directive	Directive 2009/24/EC of the European Parliament and of the Council of 23 April 2009 on the legal protection of computer programs (Codified version), OJ L 111 (5 May 2009).
ToS	Terms of Service
TMs	Technical Measures.
TRIPS	1994 Agreement on Trade Related Aspects of Intellectual Property Rights.
USCO	US Copyright Office.
USPTO	US Patent Office.
17 USC	US Copyright Act of 1976, codified in Title 17 of the United States Code.
UGC	User Generated Content.
WCT	1996 WIPO Copyright Treaty.
WPPT	1996 WIPO Performances and Phonograms Treaty.
WTO	World Trade Organisation.

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Part I - Introduction

Chapter 1: Introduction, Research Design, Methodology, Aims and Contribution

1. Introduction

Since the inception of the internet, authors of digital artworks have struggled to protect, control and monetise their work online.[1] Non-fungible tokens (NFTs) have the potential to drastically change how digital property and copyright are appreciated and governed,[2] changing the way that digital artworks are discovered and shared, and how artists are compensated.[3] Supported by blockchain technology, as CryptoArt, NFTs can transform digital artworks into unique verifiable assets that can be bought and sold online with ease, and which are becoming the preferred way to trade in digital artworks.[4]

NFTs, led by CryptoArt, have the potential to redefine in the long term the very essence of how value and ownership are protected in the digital age. However, as a new, fast-moving and complex technology, they challenge the boundaries of existing laws. This thesis recommends how copyright law can, and should, be interpreted and applied to incorporate NFTs, so to provide legal certainty and allow the technology to flourish. A failure to do so may either hinder progress of the technology, or lead to an increasing divergence between the law and the technology.

2. Copyright and the Problem of Digitisation

Copyright emerged in the UK in the Statute of Anne (1709-1710) as a means of creating scarcity of books, sheet music and other works of art and literature,[5] with protection later extended to public uses of copyright material such as live performance of theatrical plays and

[1] I. Lapatoura, 'Creative digital assets as NFTs' (2021) 32(6) Ent.L.R. 169-172; EC (2016) *Proposal for a Directive of the EP and of the Council on Copyright in the Digital Single Market* (Brussels, 14 September 2016) COM(2016) 593 final, 3.
[2] EU Blockchain Observatory and Forum, *May 2021 Trends Report* (1 June 2021) https://blockchain-observatory.ec.europa.eu/publications/may-2021-trends-report_en#description.
[3] J. Kiguru, 'NFTs are taking the Art World by Storm' (*Crypto News Flash*, 11 June 21) https://www.crypto-news-flash.com/nfts-are-taking-the-art-world-creator-economy-by-storm/.
[4] S. Kehoe, 'Crypto Assets: The Meteoric Rise of NFTs' (*McCann FitzGerald*, 6 April 21) https://www.mccannfitzgerald.com/knowledge/fintech/crypto-assets-the-meteoric-rise-of-non-fungible-tokens.
[5] L. Bently & Others, *Intellectual Property Law* (6th edn, OUP 2022), 39.

music, radio and TV broadcasting.[6] Now encapsulated by the Copyright, Designs and Patents Act 1988 (CDPA), copyright is a property right, encompassing several distinct, exclusive rights which arise automatically upon the creation of a particular class of work and which authorise the owner to do certain acts for a limited period of time.[7] Unless an exception applies, e.g. the work was created in the course of employment,[8] the author of a work is presumed to be the first owner of any copyright in that work.[9] Here the terms "author", "creator" and "artist" are used interchangeably, as it assumed that an artist as a creator of a work is the author.

Copyright is infringed by any person who, without licence from a rightsholder, does or authorises another to do any of the acts restricted by copyright,[10] although there do exist a number of "fair dealing" exceptions to copyright infringement, permitting certain acts in relation to protected works.[11]

Copyright seeks to create a balance between creators' and users' interests.[12] Creators should be rewarded for their work as a means of incentivising creativity, whereas knowledge should be openly available.[13] However, the internet, as a "global copying machine",[14] makes it difficult for creators to maintain control and monitor the use of their works, as once uploaded to the internet, works can be copied and immediately distributed worldwide, thereby depriving the creator of revenue from licensed sales, and creating a lack of scarcity. This dematerialisation of copyright protected materials has caused a paradigm shift and challenge for a legal framework previously based on tangible assets.[15] Prior to digitisation uses could be more easily tracked and pursued as infringements if unlicensed, but now uses of copyright are mostly online and global, where tracking uses and licences is often difficult, ineffectual and frustrating.[16]

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[6] B. Bodo, 'Blockchain & Smart Contracts' (2018) 26(4) IJLIT 311-336 https://doi.org/10.1093/ijlit/eay014 332.
[7] G. Dutfield & U. Suthersanen (2008) *Global IP Law* (EE, 2008) 77.
[8] Copyright Designs and Patents Act 1988 (CDPA) s11(2).
[9] CDPA s 9(1).
[10] CDPA s 16(2).
[11] CDPA Chapter III.
[12] M. Fink & V. Moscon 'Copyright Law on Blockchains.' (2019) 50 IIC 77-108 https://doi.org/10.1007/s40319-018-00776-8 83; Directive 2001/29/EC of the EP and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society. OJ L 167/10 (InfoSoc Directive), Arts 2-4.
[13] M. Fink & V. Moscon (ibid) 83.
[14] P. Bernt Hugenholtz, 'Code as Code, or the End of IP as We Know it' (1999) 6(3) MJECL 308-318, https://doi.org/10.1177/1023263X9900600306 311.
[15] M. Fink & V. Moscon (n 12) 79.
[16] B. Bodo (n 6) 332.

Digitisation has posed a fundamental challenge to copyright and the law has struggled to adapt to the pace of technological change.[17] Even though the legislative agenda for the past two decades has been about adapting copyright to the requirements of the information society,[18] many are of the view that more needs to be done to realign the incentive structure in order to ensure fair remuneration for creators.[19]

This research uses international copyright law as a frame of reference. The most relevant international treaties are the 1886 Berne Convention for the Protection of Literary and Artistic Works (the Berne Convention), the 1994 Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), the 1996 WIPO Copyright Treaty (WCT) and WIPO Performances and Phonograms Treaty (WPPT). Where relevant the discussion focuses on particular aspects of EU, UK and US law.

3. Legislative Attempts to Overcome the Problem of Digitisation

Legislative attempts to strengthen digital copyright (i.e. the protection of creative works published and available online) include the use of Digital Rights Management tools (DRMs).[20] DRMs include Technical Measures (TMs) and Rights Management Information (RMI).[21] TMs relate to any technology, device or component designed to prevent unauthorised use, i.e. the copying of a protected work, through e.g. encryption, scrambling or other transformation of the work.[22] Encryption tools limit access to works to permitted users, or the number of times a file can be opened,[23] and include passwords, special log-in procedures and anticopying devices.[24] RMI refers to information that identifies protected content, the rightsholders and any terms and conditions of use associated with a protected work,[25] so include digital

[17] P. Bernt Hugenholtz (n 14) 308.
[18] M. Schaefer, 'Why Metadata Matter for the Future of Copyright' (*Kluwer,* 27 November 2020) http://copyrightblog.kluweriplaw.com/2020/11/27/why-metadata-matter-for-the-future-of-copyright/.
[19] EP (2018) *European Parliament Resolution on DLTs and Blockchains*. (3 October 2018) 2017/2772(RSP) http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2018-0373+0+DOC+PDF+V0//EN 23.
[20] WIPO Copyright Treaty (WCT) 1996 Articles 11-12; WIPO Performances & Phonograms Treaty (WPPT) 1996 Arts 18-19.
[21] ibid.
[22] Infosoc Art 6(2).
[23] K. Walsh, 'DRM: What it is, Examples and software use cases' (*Brandfolder.com,* 4 May 2022) https://brandfolder.com/blog/digital-rights-management.
[24] P. Goldstein & P. Bernt Hugenholtz, *International Copyright* (4th edn, OUP 2019) 326.
[25] Infosoc Art 6(2).

watermarks, licensing information, website terms and copyright notices.[26] Contracting parties to the WIPO Treaties are required to provide adequate protection against the circumvention of TMs, and the removal or alteration of RMI,[27] such measures which are reflected in the EU in the InfoSoc directive,[28] and Part VII CDPA.

DRMs have been much criticised, controversial and unpopular, suffering from a lack of interoperability and standardisation.[29] They have failed to address the copyright balance,[30] favouring the larger, more powerful players in the Creative Industries (CIs).[31] The use of DRMs by the CIs has led to a retreat of law in favour of private ordering to the detriment of public policy objectives,[32] resulting in the disregard for legal protections such as limitations and exceptions, neutralising limits enshrined in law and even creating factual exclusivity over digital subject matter not eligible for copyright protection.[33] Bodo argues that copyright was never intended to prevent access to materials but to organise the market, and that polices such as DRMs, which remove or block access, are in no one's interest.[34]

For the past 20 years laws in the EU and US have ensured that Internet Service Providers (ISPs) have enjoyed a "safe harbour" from liability for infringing acts of their users of which they were unaware, meaning that they must take down infringing materials after receiving notice, but there is no requirement for them to monitor for such materials.[35] More recently, and following a proliferation of online infringements and lobbying from the CIs,[36] the EU acknowledged the need to adapt the EU copyright framework to guarantee that authors receive a fairer share of the value generated by the use of their works,[37] and in April 2019 the European

[26] S. Stokes, (2019) *Digital Copyright*: *Law and Practice* (5th edn, Hart 2019) 206.
[27] WCT Arts 11-12 & WPPT Arts 18-19.
[28] InfoSoc Art 6(1) and 7(1).
[29] A. Savelyev, 'Copyright in the Blockchain Era' *Higher School of Economics Research Paper* No. WP BRP 77/LAW/2017 (21 November 2017) https://ssrn.com/abstract=3075246 552.
[30] EP (2018) (n 19) 23; S. Stokes (2019) (n 26) 1.
[31] C. Doctorow, 'The EU Hired a company to make a Video' (*Boing Boing*, 7 March 2019) https://boingboing.net/2019/03/07/govt-paying-lobbyists.html; M. Kretschmer, 'Digital Copyright: The End of an Era' (2003) 25(8) EIPR 333.
[32] M. Fink & V. Moscon (n 12) 79.
[33] ibid 83.
[34] B. Bodo (n 6) 332.
[35] P. Samuelson (2019) 'Europe's Controversial Digital Copyright Directive Finalised' (2019) 62(11) Communications of the ACM 24-27 https://cacm.acm.org/magazines/2019/11/240358-europes-controversial-digital-copyright-directive-finalized/fulltext?mobile=false.
[36] P. Samuelson (2018) 'The EU's Controversial DSM Directive' (2018) 61(11) Communications of the ACM 20-23 https://doi.org/10.1145/3277562.
[37] EP (2016) (n 1) 3.

Parliament adopted the Digital Single Market Directive (DSM Directive).[38] Within the EU the DSM Directive now imposes stricter liability rules on Online Content-Sharing Service Providers (OCSSPs), in an attempt to fix the "value gap", i.e. the idea that a platform obtains unreasonable value from enabling users to share protected works without ensuring that authors receive fair remuneration, requiring that certain platforms work with rightsholders to ensure that protected works cannot be uploaded.[39]

The DSM Directive has caused much controversy with opponents warning that these changes, meant to help content creators benefit financially from the open web and level the playing field, will only lead to a more closed internet.[40] Whilst conceding that changes are required to copyright law to ensure fair remuneration, they argue that "upload filters" are not the solution, and that requiring internet platforms to perform automatic filtering of uploaded content takes an unprecedented step towards the transformation of the internet from an open platform for sharing and innovation into a tool for the automated surveillance and control of its users. [41]

The controversy surrounding the DSM Directive highlights the legislative challenges involved in attempting to address the copyright balance online. Member States have struggled to implement the DSM Directive,[42] with the EU copyright position becoming increasingly complex.[43] The UK Government has made it clear that post-Brexit it will not implement the DSM Directive, with any future changes to the UK copyright framework considered as part of the usual domestic policy process.[44]

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[38] Directive 2019/790 of the EP and of the Council of 17 April 2019 on Copyright and Related Rights in the Digital Single Market OJ L 130/92 (DSM Directive).
[39] DSM Art 17.
[40] E. Livni, 'The EU has approved a copyright law that could change the internet as we know it' (*Quartz* (21 September 2018) https://qz.com/1387466/article-11-and-article-13-the-eu-copyright-law-that-could-overhaul-the-internet/.
[41] T. Berners-Lee & Others. *Letter to President of the EP* (12 June 2008) https://www.eff.org/files/2018/06/13/article13letter.pdf.
[42] J. Reda, 'What Member States can learn from the AG opinion on Art.17' (*Kluwer,* 26 June 2021) http://copyrightblog.kluweriplaw.com/2021/07/26/what-member-states-can-learn-from-the-ag-opinion-on-article-17/; Copyright in the DSM Directive – Implementation (*Create*) https://www.create.ac.uk./dsm implementation.
[43] E .Rosati, 'The DSM Directive Two Years On' (*Springer,* 16 June 2021) https://link.springer.com/article/10.1007/s40319-021-01082-6.
[44] UK Parliament. *Copyright: Questions for Department for Business, Energy and Industrial Strategy*. UIN 4371, (16 January 2021) https://www.parliament.uk/business/publications/written-questions-answers-statements/written-question/Commons/2020-01-16/4371/

4. Protecting Art Online

So, even though digital artists have the protection of copyright law, controlling and tracking use of works, enforcing infringement and obtaining sufficient remuneration is challenging and complex.[45] Whilst able to mitigate some piracy issues, DRMs do not provide a perfect solution,[46] as they can be expensive to implement and when used, often circumvented.[47]

Licensing is cumbersome and challenging in a global world, and often not practical for the sums of money involved,[48] it is too early to conclude whether the DSM Directive will be effective in increasing revenue for creators,[49] plus the proliferation of digital media has created a steep decline in the value of works.[50] Whilst the internet has liberated information it has done little to transform many of the pre-existing centralised organisations,[51] and creators are less frequently the ones in control, i.e. owning and controlling their rights,[52] with intermediaries, e.g. art galleries, inserting themselves in the value chain leading to a reduction in the final licence fee to reach the author.[53]

The global nature of the internet creates barriers and expense when tracking infringers, and the mere existence of a legal right is insufficient if enforcement is not available or possible. So, sharing work on the internet often means losing control over that work as, even if the creator is aware of an infringement, it is costly and burdensome to take legal action.

5. Blockchain, NFTs and CryptoArt

The term "Blockchain" came to the fore with Bitcoin in 2008,[54] describing the technology behind Bitcoin and which has been since shown to have many uses beyond cryptocurrencies. Built through cryptography and peer-to-peer networks, blockchains are a decentralised alternative to centralised databases. As decentralised, distributed and immutable ledgers they

[45] I. Lapatoura (n 1) 169.
[46] A. Savelyev (n 29) 552.
[47] I. Lapatoura, (n 1) 169.
[48] A. Savelyev (n 29) 553.
[49] P. Samuelson (2019) (n 35).
[50] R. Jackson. 'Does the EU Copyright Directive Make a Case for the Blockchain?' (*Hackernoon*, 20 September 2018) https://hackernoon.com/does-the-eu-copyright-directive-make-a-case-for-blockchain-db316d7cf05d.
[51] A. Wright & P. De Filippi. 'Decentralized Blockchain Technology & the Rise of Lex Cryptographica' (10 March 2015) https://ssrn.com/abstract=2580664 19.
[52] Dutfield & Suthersanen (n 7) vi
[53] A. Savelyev (n 29) 553.
[54] S. Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System* (2008) https://bitcoin.org/en/bitcoin-paper.

can be used to record transactions, track assets and build trust. Their resistance to tampering and hacking makes them useful for storing important records, allowing for an unfalsifiable public ledger guaranteeing the ownership of an asset e.g. Bitcoin and, as trust is crucial to the digital economy, a platform for secure and reliable mass collaboration which holds many possibilities for a new kind of organisation and society.[55]

Blockchains, together with smart contracts,[56] enable the development of new governance systems which create a flexible and fair interactive space where users can act as collective middlemen and administer their own affairs through a shared decentralised database and automised software.[57]

The European Parliament in 2018 identified copyright as an area affected by blockchain, highlighting smart contracts, the CIs and copyright as positive applications.[58] Blockchains enable the tracking and management of copyright, enabling greater ownership and creative development by artists through an open public ledger that can clearly identify ownership and help to link creators to their work,[59] benefitting authors with more transparency and traceability of the use of their work, and reducing the need for intermediaries with regard to receiving payment.[60]

So, blockchain technology has the power to revolutionise copyright: by increasing the licensing efficiency and autonomy of creators and reducing the need for intermediaries it has the potential to disrupt current business models and enable authors to protect, control and profit more from their creative works.[61]

5.1 NFTs: What Are They?

An NFT is a unit of data i.e. a digital file which is registered on a blockchain as a *unique* cryptographic token. Blockchain's resistance to tampering and hacking makes it useful for

[55] D. Tapscott & A. Tapscott, *Blockchain Revolution.* (Portfolio Penguin, 2016) 33.
[56] A. Wright & P. De Filippi (n 51) 1.
[57] ibid 19.
[58] EP (2018) (n 19) 36-38, 22 & 23.
[59] ibid 22.
[60] ibid 23.
[61] B. Bodo (n 6).

storing important records such as NFTs,[62] allowing for an unfalsifiable public ledger which guarantees the ownership of an NFT. An NFT identifies the digital file recorded in that NFT, and the history of its trading. Plus, the fact that an NFT is stored on a blockchain means that it stored in a decentralised and cryptographically secure manner.[63]

The non-fungible element refers to the fact that an NFT is not mutually interchangeable with any other token, unlike a cryptocurrency token such as Bitcoin which is "fungible" i.e. identical to another. The value of an NFT is that it is *unique*. So, the value proposition of an NFT is that it is digitally unique, exists on a blockchain (e.g. Ethereum) so is cryptographically secure, and provides proof of ownership.

NFTs have grown significantly in popularity in recent years.[64] Centred around algorithmically generated characters created, stored and traded on the Ethereum blockchain CryptoCollectibles such as CryptoKitties[65] and CryptoPunks[66] first drew attention in 2018. NFTs are now used in several other specific applications requiring unique digital items, including CryptoArt and Crypto gaming. Creating, or "minting" an NFT of a digital artwork makes it cryptographically unique, a term coined as CryptoArt.[67]

5.2 CryptoArt

CryptoArt allows for digital artworks to be bought, sold or collected by anyone in a decentralised manner. Digital artworks are published directly onto a blockchain in the form of an NFT, which makes the ownership, transfer and sale of digital art possible in a cryptographically secure and verifiable manner, with anyone able to verify ownership and provenance of a specific NFT.

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[62] D. Thwaites, 'A token sale' (*The Conversation,* 24 February 2021) https://theconversation.com/a-token-sale-christies-to-auction-its-first-blockchain-backed-digital-only-artwork-155738.
[63] A. Hern, 'Art, amulets and Cryptokitties' (*The Guardian,* 26 February 2021) https://www.theguardian.com/technology/2021/feb/26/art-amulets-cryptokitties-new-frontier-cryptocurrency-non-fungible-tokens-nft.
[64] C. Hales, 'NFTs and Art that lives on the Blockchain' (*JDSUPRA, 23 February* 2021) https://www.jdsupra.com/legalnews/non-fungible-tokens-and-art-that-lives-5606470/ .
[65] CryptoKitties https://www.cryptokitties.co.
[66] CryptoPunks https://www.larvalabs.com/cryptopunks.
[67] P. Lum, 'What is CryptoArt?' (*The Guardian,* 4 March 2021) https://www.theguardian.com/culture/2021/mar/05/what-is-cryptoart-how-much-does-it-cost-and-can-you-hang-it-on-your-wall.

NFTs in the digital art market enable claims of authenticity and scarcity, despite the ease with which digital works can ordinarily be copied.[68] This allows artists to do something new, i.e. mark something as the "original", as whilst every copy of a particular digital JPEG or TIFF file is identical, there is only one, or a limited number, of NFT versions of it, creating a concept similar to that of hundreds of e.g. posters of an artwork, but only one, or a limited number of prints of the original.[69] NFTs do not prevent copying *per se*, in that it is still possible to download the image file recorded in an NFT, but rather a way to control and monetise copyright. NFT creators can program a resale royalty into an NFT which automatically pays the creator each time the NFT is resold, providing creators with unprecedented control over their artwork in the secondary market.[70] Programmed into a smart contract the royalty is automatically executed on any subsequent transfer of the NFT, and crucially without the need of an intermediary.[71]

So, as CryptoArt, NFTs enable an artist to create a permanent cryptographic token linked to a digital artwork, allowing for the permanent and trustworthy proof of ownership and secure method of transferability of that artwork. NFTs allow artists to deal directly with collectors, access new markets, earn remuneration for their work and royalties for future sales, obtain recognition for and retain control of their digital artworks. CryptoArt has the potential to rebalance the copyright incentive for digital artists and create a level playing field between digital artists and their in real life (IRL) counterparts.

5.3 Legal Challenges

Legal challenges regarding blockchain technology include problems with law enforcement, smart contracts and decentralised governance.[72] The pseudo-anonymous and global nature of a blockchain represents regulatory and enforcement challenges,[73] and given blockchain's immutable nature, an invalid entry may be difficult to correct and illegal content hard to

[68] D. Thwaites (n 62).
[69] J. Ball, 'How NFTs became the latest tech speculation bubble' (*The Guardian,* 13 March 2021) https://www.theguardian.com/technology/2021/mar/13/how-non-fungible-tokens-became-the-latest-tech-speculation-bubble.
[70] M. Dore, 'Legal issues to watch in navigating the secondary market for NFTs' *(Daily Journal* 17 April 2021) https://www.gibsondunn.com/wp-content/uploads/2021/05/Dore-Legal-issues-to-watch-in-navigating-the-secondary-market-for-NFTs-Daily-Journal-04-27-2021.pdf .
[71] I. Lapatoura (n 1) 169.
[72] A. Wright & P. De Filippi (n 51) 3-4.
[73] ibid 21.

remove.[74] There exist unresolved issues around smart contracts as legal systems lack a consensus on how code as contract fits into the traditional concepts of contract law,[75] and decentralised organisations are difficult to regulate as they are both stored and executed across a network of computers without a central authority.[76]

NFTs themselves are complex and unregulated, and challenges arise when reconciling existing copyright laws with the borderless, standardised and automated regulatory solutions offered by blockchain and NFTs.[77] Given the disintermediated nature of the blockchain, enforcement when NFTs are incorrectly or illegally created is challenging at best, and often impossible. Many creators report their works stolen and sold as NFTs without their knowledge or permission,[78] with the art community split between those who believe that NFTs are the next big thing, and those who see them as just another way for others to steal their creative work.[79]

Users are often unaware of the legal issues, with collectors not understanding what they are buying, or creators what they are selling, with a user's perception of a transaction often not matching reality.[80] Unless otherwise agreed an artist retains copyright in an artwork,[81] which includes the ability to mint further NFTs, and the buyer of an NFT does not gain exclusive access to the work, but a one-of-a-kind cryptographic token that acts as a certificate of ownership.[82] Questions arise as to the personal property nature of NFTs, rights granted with the transfer of an NFT, the legality of secondary sales, whether the unauthorised minting of an NFT is copyright infringement and the role of the NFT platforms.

> *The most common concern raised about NFTs is the prevalence of consumer confusion about IPR implicated in their creation or transfer. Unsophisticated consumers may*

[74] COALA *IP Report V1* (May 2016) https://github.com/COALAIP/specs/blob/master/presentations/COALA%20IP%20Report%20-%20May%202016.pdf.
[75] B. Bodo (n 6) 316.
[76] A. Wright & P. De Filippi (n 51) 19.
[77] B. Bodo (n 6) 311.
[78] J. Purtill, 'Artists report discovering their work is being stolen' (*ABC.net.au,* 16 March 2021) https://www.abc.net.au/news/science/2021-03-16/nfts-artists-report-their-work-is-being-stolen-and-sold/13249408; P. Yuna, 'NFT art shakes up Korean art market' (*The Korea Herald,* 9 July 2021) http://m.koreaherald.com/amp/view.php?ud=20210609000829 ; H. Lydiate, 'Get Minted' (*Art Monthly* no 453, February 2022) https://artquest.org.uk/artlaw-article/get-minted/.
[79] J. Purtill (ibid).
[80] N. De, 'State of Crypto' (*CoinDesk,* 9 March 2021) https://www.coindesk.com/policy/2021/03/09/state-of-crypto-its-time-to-talk-about-nfts-and-intellectual-property-law.
[81] M. Yarm, 'WTF is an NFT?' (*Inputmag,* 26 February 2021) https://www.inputmag.com/culture/linkin-park-mike-shinoda-happy-endings-nft-interview.
[82] A. Mak, 'We now know who paid $69.3 Million for a digital artwork – Sort of' (*Slate.com,* 12 March 2021) https://slate.com/technology/2021/03/metakovan-beeple-christies-auction-nfts.html.

> *conflate the purchase of an NFT associated good with ownership of IPR in that good. Even sophisticated consumers may struggle to ascertain what rights accompany a particular NFT, because there are few marketplace standards for clear disclosure by NFT sellers.*[83]

Lack of legal certainty has led to complexity, confusion and inconsistency within the NFT ecosystem; with platforms resorting to private ordering and arbitrary standards, hiding behind onerous and lengthy Terms of Service (ToS). This situation presents significant challenges for the user.

> *Today, consumers are expected to have significant knowledge and blockchain background in order to onboard and participate safely. Many platforms building on top of web3 are dis-intermediating themselves from the property, controls, and responsibilities expected of their users, and no one (including OpenSea) yet has all the right tools in place to help consumers navigate the complexities of NFT security independently.*[84]

Legal certainty is required to support business confidence and encourage investment in, and development of, the technology. It is also required to provide a high level of protection for rightsholders as granted by the InfoSoc Directive;[85] improve consumer safety in a rapidly evolving landscape; ensure a level playing field between digital and IRL artists; and rebalance the copyright incentive for digital artists.

6. Research Questions

Blockchain is still a relatively nascent research topic,[86] with commentators only recently considering the technology's impact beyond cryptocurrencies.[87] There is growing academic interest in the area of blockchain and copyright, NFTs, and CryptoArt.[88] However, blockchain

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[83] USPTO & USCO, *NFTs and IP* (A Report to Congress, March 2024) https://www.uspto.gov/sites/default/files/documents/Joint-USPTO-USCO-Report-on-NFTs-and-Intellectual-Property.pdf iv.

[84] A. Atallah, 'Introducing the NFT Security Group' (*OpenSea Blog*, January 17, 2022) https://opensea.io/blog/articles/introducing-the-nft-security-group.

[85] InfoSoc Recitals 9-11

[86] H. Treiblmaier, 'Towards More Rigorous Blockchain Research' (*Frontiers in Blockchain*, 16 May 2019) https://doi.org/10.3389/fbloc.2019.00003.

[87] S. Nascimento & Others, *Blockchain Now And Tomorrow* (Publications Office of the EU, Luxembourg, 2019) https://publications.jrc.ec.europa.eu/repository/handle/JRC117255.

[88] A. Wright & P. De Filippi (n 51); A. Savelyev (n 29); B. Bodo (n 6); M. Fink & V. Moscon (n 12); C. Tann, 'Copyright Interrupted' (2020) 42(11) EIPR 698; A. Guadamuz, 'The Treachery of Images: NFTs and Copyright'(15 August 2021) JIPLP, jpab152 https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3905452; I. Lapatoura (n 1); P. Mezei & Others, 'The Rise of NFTs and the Role of Copyright Law - Part II'(*Kluwer,* 22 April 2021) http://copyrightblog.kluweriplaw.com/2021/04/22/the-rise-of-non-fungible-tokens-nfts-and-the-role-of-copyright-law-part-ii/; P. Caglayan Aksoy & Z. Ozkan Uner, 'NFTs and Copyright: Challenges and Opportunities' (2021) 16(10) JIPLP 1115 https://doi.org/10.1093/jiplp/jpab104; M, Noh, & Others, 'GM! Time

and NFT predictions are often theoretical in nature, with little written on the applications and NFT platforms themselves,[89] and few empirical studies regarding NFT platforms and copyright.[90] The recognition of NFTs as personal property also has implications for NFTs,[91] and whilst acknowledged in US literature,[92] little has been said from an EU copyright perspective.[93] Blockchain and NFT applications have potential benefits, but their risks and problems are still not yet completely known.[94] The European Parliament in 2018 highlighted the need for further research into the potential risks and societal impact of the technology,[95] and this still remains the case today.

The current regulation of choice in the NFT space is not copyright law, but code.[96] However, code does not replace law,[97] so the underlying blockchain technology does not exclude the application of legal rules when something goes wrong, as it inevitably does and will do.[98] With this in mind, this thesis aims to further understanding by considering the following questions:

- What are the copyright issues that arise with CryptoArt?
- How, in practice, do NFT Platforms approach such issues?
- How can the law be interpreted and applied to bridge the gap between the practice and the law?
- And finally, why should copyright evolve to bridge this gap?

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to Wake UP and Address Copyright and Other Legal Issues Impacting Visual Art NFTs' (2022) 45(3) JLA https://ssrn.com/abstract=4028116; B. Bodo & Others, 'The Rise of NFTs: these aren't the droids you're looking for' (2022) 44(5) EIPR 265-282 https://ssrn.com/abstract=4000423; L. Helman, & O. Tur-Sina, 'Bracing Scarcity: Can NFTs Save Digital Art?' (5 March 2023) Fla.St.U.L.Rev, Forthcoming https://ssrn.com/abstract=4378570.

[89] C. Elsden, 'Making Sense of Blockchain Applications' (*Lancaster University*, 21 April 2018) http://www.research.lancs.ac.uk/portal/en/publications/making-sense-of-blockchain-applications(d19a4ffe-5c1b-408f-902d-881da9e5b5e5).html.

[90] A. Thorn & Others, 'A Survey of NFT Licences: Facts and Fictions' (*Galaxy*, August 2022) https://www.galaxy.com/insights/research/a-survey-of-nft-licenses-facts-and-fictions/.

[91] *Lavina Deborah Osbourne v Persons Unknown and Ozone* [2022] EWHC 1021 (Comm).

[92] J.L. Durham, 'Creating True Digital Ownership with the FSD' (2023) 23(3) Wake Forest Intell.Prop.L.J. 136 https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4365074; J.A.T. Fairfield, 'Tokenised: The law of NFTs and Unique Digital Property' (2022) 97 Ind LJ 1261.

[93] P. Mezei, 'Hop on the Roller Coaster – New Hopes for Digital Exhaustion?' (2022) 71(11) GRUR International 1017.

[94] EP (2018) (n 19) N.

[95] ibid 73

[96] P. Mezei & Others (n 88).

[97] L. Lessig *Code and Other Laws of Cyberspace* (Basic Books, 1999)

[98] P. Caglayan Aksoy, 'The applicability of property law rules for CryptoAssets' (2023) 15(1) LIT 185 https://doi.org/10.1080/17579961.2023.2184140 193.

7. Thesis Outline

The thesis firstly highlights the copyright issues that are raised by NFTs, before then analysing how NFT platforms apply the law in practice. It continues by interpreting how it is possible to interpret the current law in order to bridge the identified gap between the practice and the law, before finally justifying from a theoretical point of view why this should be the case.

This research is split into six parts

Part I - Introduction

This section consists of the current Chapter 1, which highlights the challenges of digitisation for digital artists and introduces blockchain technology, NFTs and CryptoArt. It details the research questions, methodology, aims and contributions, and limitations of the thesis.

Part II - What is CryptoArt, and what Copyright Issues arise?

Building on Chapter 1, Chapter 2 outlines in more detail the genesis and development of digital art and CryptoArt. Chapter 3 continues by highlighting the legal issues raised by NFTs and CryptoArt. It outlines the copyright protection of digital art before introducing current copyright issues that arise in relation to the creation, purchase and sale of CryptoArt.

Part III - How do NFT platforms approach Copyright?

This research includes the empirical legal research of a selection of six NFT platforms, and Chapter 4 sets out the method used to conduct the empirical research, i.e., case studies. Intended to provide context and understanding for the further analysis of the NFT Platforms, Chapter 5 provides an overview and comparison of the functionality of the six NFT Platforms studied. Chapter 6 analyses the overarching Umbrella Themes that emerge from the case study data, before Chapter 7 which continues by analysing the Core Copyright Themes, i.e. the approach taken by the platforms to rights, infringement and platform liability.

Part IV - How can Copyright law evolve?

This part analyses in depth and from a doctrinal perspective the copyright issues raised, suggesting how, and with learnings from Part III, such issues could be overcome in order to bridge the gap between the practice and the law. Chapter 8 analyses rights that are transferred

with an NFT, and the problem of digital exhaustion, concluding with how the law might be interpreted to allow for the classification of CryptoAssets as tangible objects capable of distribution. Chapter 9 then continues this doctrinal analysis by considering whether the minting, i.e., creating of an unauthorised NFT is infringement of copyright. Whilst the current law is complex and uncertain, this Chapter recommends how the law might be interpreted to support a claim for infringement, concluding with how this position could be best achieved through enforcing the exclusive distribution right. The final Chapter 10 of this Part IV then discusses the liability of the NFT platforms. It analyses whether a platform can be held responsible for the unlawful actions of its users, again suggesting how the classification of CryptoAssets as tangible objects would require a platform to take more responsibility, from both a copyright and a consumer law perspective.

Part V - Why should the law evolve?

Chapter 11 justifies from a theoretical point of view why the law should evolve to accommodate NFTs and CryptoArt, and bridge the gap between the law and the practice. Creators need to be able to protect and exploit their work, collectors need to be able to buy NFTs with confidence, and legal certainty is critical to encourage businesses to develop and innovate, and to support further technological developments.

Part VI - Conclusion

Chapter 12 concludes with a discussion on findings, recommendations, limitations and further research. It identifies how the aims of the thesis have been met concluding with how NFTs, led by CryptoArt have the potential to redefine how value and ownership are protected in the digital age.

8. Comparative Law Methodology

A doctrinal legal methodology bases its analysis on the applicable laws and regulations relevant to legal issues raised in the research, assessing the positive or negative quality of the law and determining what should be done to improve the situation.[99] Given the global nature of the internet, comparing how the same area of law is regulated in different jurisdictions is imperative when analysing intellectual property rights (IPR), copyright and NFTs, and a

[99] S. Taekema, 'Theoretical and Normative Frameworks for Legal Research' (14 February 2018) LaM https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3123667.

necessary instrument for harmonisation.[100] By adopting an overall comparative methodology this thesis not only compares the laws of different jurisdictions (EU, UK and US) but also undertakes empirical legal research to investigate the "law in context", analysing how copyright is being interpreted and applied by the NFT platforms. By adopting such an approach we can identify and highlight the gap between current law and practice, and suggest how such a gap may be bridged, a solution that resonates with the "better solution" approach that underlines many comparative law research projects.[101]

Whilst there is no agreement as to the methods used in comparative legal research, Mark van Hoecke suggests how "we need a 'toolbox', not a fixed methodological road map" for any comparative legal research.[102] He highlights six different methods: the functional method, the structural method, the analytical method, the law-in-context method, the historical method and the common-core method.[103]

> *Most of the methods will make the researcher move from a surface level of comparison to a deeper level: diverging types of 'right' included in complex legal concepts, rules and institutions, underlying world views, a detected common structural framework behind apparent differences, elements in history that are weakening the strength of seemingly opposed and irreconcilable approaches etc.* [104]

The methods are not mutually exclusive, and it is possible to combine all of them in the same research.[105] To a greater or lesser extent all have been combined and used within this research, with the focus on "law in context" in part III.

In Part III of this research, a socio-legal methodology is adopted within the overall umbrella of comparative methodology to carry out empirical case study research of NFT platforms, adopting methods from the social sciences, and in order to provide social reality to the law in context. This empirical research analyses how copyright law is being interpreted in practice, and the adoption of private ordering mechanisms by the NFT platforms.

[100] M. Van Hoecke, 'Methodology of Comparative Legal Research' (2015) LaM 1-35, https://doi.org/10.5553/rem/.000010 2.
[101] ibid 30.
[102] ibid 1; P. Mezei, *Copyright Exhaustion* (2nd edn, CUP 2022) 6.
[103] M. Van Hoecke (ibid) 8.
[104] ibid 29.
[105] ibid 9.

9. Aims and Contributions of the Thesis

Three main copyright themes emerge from the literature and from the empirical research in relation to the minting and trading of CryptoArt via NFT platforms. These are: rights in NFTs, copyright infringement and platform liability. This research demonstrates how there is a disconnect, or "gap", between current copyright law and the practice of the NFT platforms. NFT platforms permit users to mint i.e. create, sell and impose royalties on NFTs. They encourage trade through secondary markets, and endorse the view that the minting of unauthorised NFTs is copyright infringement. The platforms also go to great lengths to avoid any liability for the actions of their users, hiding behind onerous terms of service (ToS) and safe-harbour rules However, as this thesis discusses, in each of these areas copyright law is less clear.

The contributions this thesis makes are threefold:

9.1 Case Study Analysis

Firstly, by adopting a comparative methodology, this thesis takes the time to study in detail the functionality of the NFT platforms themselves and their approach to copyright, via empirical research and the use of case studies, analysing how the law is being interpreted in practice and, in the absence of case law or legal certainty, the adoption of private ordering mechanisms by the NFT platforms. It is only through identifying and highlighting disparities between the practice and the current law that we can propose a better solution and direction of travel for copyright law. The importance of evidence based IP policy making and reform has gained attention in the UK,[106] with empirical research providing valuable insight into how IP operates in practice.[107]

9.2 Bridging the Gap

Secondly, it proposes a direction of travel for bridging this "gap", arguing that copyright law, in relation to NFTs and CryptoArt should move towards the idea of *tangible* CryptoAssets. This would allow for the legal "sale" of CryptoArt, and the confidence and ability of an author to bring an infringement claim for an unauthorised NFT, so supporting consumer expectations

[106] I. Hargreaves, *Digital opportunity: A review of IP and growth* (UK IPO, 2011) Recommendation 1.
[107] S. Kheria, 'To boldly go: Empirical research in IPR teaching' in S. Jacques & R. Soetendorp (eds) *Teaching IP Law* (EE 2023) 98;

and an increase to consumer welfare. Whilst suggested in relation to NFTs in US literature,[108] this research develops the idea in relation to EU copyright law and the latest developments surrounding the characterisation of CryptoAssets as property.[109]

9.3 Justifying the Direction of Travel

Finally, in addition to analysing this direction of travel from both an empirical and a doctrinal point of view this research justifies this position from a theoretical intellectual property (IP) point of view. Any expansion of rights can be justified from a theoretical IPR point of view and supports the continuing development of the CryptoArt movement, and its role in creating a level playing field for digital artists and their IRL counterparts.

10. Limitations

All sources listed in the Bibliography are current, up to date and were last accessed 6 March 2025. However, as the NFT ecosystem is a rapidly evolving landscape some references, websites and NFT platforms referred to and used during this research are no longer available. This is of particular note with the case study evidence and content from the platforms as used for analysis in Part III, and where relevant is highlighted in the text in Part III.

The focus of this research is copyright law. However, there exists an overlap with both property law and consumer law, e.g. in the UK the 2015 Consumer Rights Act. These areas have not been covered within this research. Equally, whilst the focus of this thesis is CryptoArt, any conclusions reached also have implications beyond CryptoArt, i.e., impacting NFTs and CryptoAssets more broadly.

This research also focuses purely on NFT Platforms, considered to be outsiders in relation to the traditional art market. Whilst CryptoArt has achieved a degree of legitimacy within the traditional art world, with both Sotheby's and Christies having dedicated Digital Art and NFT departments, CryptoArt sales that take place via the NFT platforms are nevertheless still

[108] J. L. Durham (n 92); J. A. T. Fairfield (n 92); C. Lim, 'The Digital FSD in a blockchain world' (2022) 91 Fordham L.Rev 721; J. Marinotti, 'Tangibility as Technology'(2021) 37(3) Ga.St.U.L.Rev 671.
[109] *Osbourne* (n 91).

considered to be "outside" of the traditional art market.[110] This research focuses on NFT platforms as a phenomenon, rather than the wider traditional art market.

The majority of NFT platforms are based in and governed by US law. However, even though this is a comparative study, given the location and background of the author, this research views copyright primarily through the lens of EU/UK law, with context, comparison and insight sought from US law, and any differences highlighted. A number of copyright principles are influenced by international treaties and it is possible to draw inferences, themes and conclusions from the research, and given the global nature of the internet and blockchain, any recommendations made need to account for this international aspect.

Finally, blockchain technology is still in development. This research is conducted from a legal point of view and consequently offers no conclusion or analysis as to the suitability or scalability of the technology.

[110] Arts Economics, *The Art Basel & UBS Art Market Report 2024* https://theartmarket.artbasel.com/download/The-Art-Basel-and-UBS-Art-Market-Report-2024.pdf 34.

Part II – What is CryptoArt, and what Copyright Issues arise?

Building on Part 1, this Part of the thesis outlines in more detail the genesis and development of digital art and CryptoArt in Chapter 2, before highlighting current legal issues in relation to CryptoArt in Chapter 3.

Chapter 2: From Digital Art to CryptoArt

1. Introduction

Beginning with a history of digital art this Chapter builds on Chapter 1 by further outlining the problems experienced by digital artists when protecting and exploiting their work online, before describing the development of NFTs and CryptoArt. It outlines the development of blockchain technology in relation to the protection of creative expressions, and concludes by highlighting future implications to the art world of the use of NFTs. This Chapter provides background and context to the research, and a number of the themes discussed will be revisited in Part V, when the analysis turns to justifying the position of this research from a theoretical copyright perspective.

Blockchain technology is challenging to approach methodologically as it is a microcosm of the complex interdisciplinary dynamics of law, computer science and in relation to digital art, art and arts entrepreneurship,[1] with researchers also often studying the blockchain through technological, financial, legal and/or ideological lenses.[2] This research is primarily undertaken through a legal (copyright) lens. However, the aim of this Chapter is to provide context by considering the background and development of the blockchain through a more descriptive, and ideological, point of view. The literature used consequently draws on a broad cross-section of blockchain writing from finance, law, arts entrepreneurship, computer science, philosophy and art.

[1] A. Whitaker, 'Art and Blockchain: A Primer, History, and Taxonomy of Blockchain Use Cases in the Arts' (2019) 8(2) Artivate: A Journal of Entrepreneurship in the Arts 21-46 doi:10.34053/artivate.8.2.2 22.
[2] U.W. Chohan, 'The Leisures of Blockchains: Exploratory Analysis' in U.W Choan, *NFTs* (Routledge 2024).

2. What is Digital Art?

Digital art can be defined as "digital born, computable art that is created, stored and distributed via digital technologies, and [which] uses the features of these technologies as a medium."[3] It is a broad term, and includes art made using a wide variety of mediums. For example from computer-aided art where the computer is a mere tool,[4] through to generative, robotic, kinetic, virtual reality and augmented reality art.[5] Digital art encapsulates an artistic work or practice that uses any form of digital technology as part of its *creation or presentation* process,[6] so can encompass art scanned from another source, e.g. non-digital hand-drawn images which are scanned into a computer and edited using a software program like Adobe Illustrator, but the term is usually reserved for art that has been non-trivially modified by a computer process.[7] There persists a debate as to whether photographs are digital artworks,[8] a somewhat subjective distinction that hinges on the degree of manipulation that has been carried out to a photograph. This research will assume that photographs that have been added to NFT platforms have been sufficiently digitally manipulated in order to qualify as digital artworks. Digital art can also involve animation and 3D virtual sculpture renderings, as well as projects that combine several technologies.[9]

The roots of digital art can be traced back to the dawn of the information age in the 1950s.[10] Artists have always been among the first to reflect on the culture and technology of their time, and were experimenting with the digital medium decades before the digital revolution.[11] However, digital art advanced rapidly during the 1990s as artists began using the internet to create and disseminate work, for example *My Boyfriend Came Back from the War* (1996), by Olia Lialina, used hyperlinks which viewers clicked through to reveal the artist's narrative. Where artistic movements of the past were often born out of geographical proximity and social interaction, artists of the 1990s could start movements that crossed continents,[12] and

[3] C. Paul (2016) *A Companion to Digital Art*. (Oxford: Wiley Blackwell Publishers, 2016) 2.
[4] S. Stokes, (2019) *Digital Copyright* (5th Edition, Hart 2019) 35.
[5] V&A, Digital Art. (VAM.ac.uk) https://www.vam.ac.uk/articles/digital-art#:~:text='Digital%20art'%20describes%20the%20use,reality%2C%20and%20augmented%20reality%20art.
[6] The Art Story, 'Summary of Digital Art' https://www.theartstory.org/movement/digital-art/.
[7] B, Wands, *Art of the Digital Age* (Thames & Hudson, 2006) 10-11.
[8] I. Stanley, 'When Does It Stop Being Photography and Start Becoming Digital Art?' (*Fstoppers,* 10 October, 2020) https://fstoppers.com/originals/when-does-it-stop-being-photography-and-start-becoming-digital-art-523268.
[9] M. Colalillo, 'What is Digital Art?) (*Study.com*, 21 November 2023) https://study.com/academy/lesson/what-is-digital-art-definition-history-examples.html.
[10] J. Campbell, '*Digital Art' Research Starters*. (Salem Press Encyclopaedia, 2021).
[11] C. Paul (2015) *Digital Art* (Thames & Hudson, 2015) 7.
[12] The Art Story (n 6).

collaborations such as the collective group Nasty Nets allowed individual artists from different countries and social classes to interact, collaborate, and exchange ideas in ways which were formerly impossible.[13] By the end of the century, “digital art” had become an established term, with museums and art galleries around the world starting to collect and organise major exhibitions of digital work.[14]

As technology has become more entrenched in everyday existence, the novelty of the "digital" in art has worn off. Today, it is par for the course to see much conceptual, video, internet, social media, and multimedia art utilising digital tools and media without specific alignment to the digital art movement, and works in this realm are often now considered under the wider umbrella term "new media art,"[15] a term that has often been used interchangeably with digital art. However, although the term is constantly evolving and fluid, for the sake of clarity this research will rely on the term “digital art”, and by which to mean as defined above, digital-born, computable art that is *created, stored and distributed via digital technology*, rather than art that uses digital technologies as a tool for the creation of more traditional in real life (IRL) art objects, e.g. a physical photograph, print or sculpture.[16]

3. The Impact of Digital Art

Since the 1950s digital art has revolutionised the way that art can be made, distributed, and viewed on a grand scale.[17] Although some digital art leans heavily on the traditional gallery or museum venue for viewing, especially in the case of installations that require machinery and complex components, most can easily be distributed electronically and viewed via a computer screen, social media, or the internet.[18] This transition has empowered many artists to create their own careers with the ability to bypass traditional representation and gallery presence, using contemporary tools such as crowdsourcing to fund, and social media to share, their work.[19] The medium is not only a way to manipulate and create art, but is often used as a

[13] Net Art Anthology, *Nasty Nets* https://anthology.rhizome.org/nasty-nets.
[14] C. Paul (2015) (n 11) 7.
[15] The Art Story (n 6).
[16] C. Paul (2015) (n 11) 8.
[17] The Art Story (n 6).
[18] ibid.
[19] J. Campbell (n 10).

means of social commentary,[20] and digital artworks have the potential to go viral providing digital artist with the power to spread their art into the mainstream consciousness.[21]

Digital art, together with the digital art community, has created a "vast expansion of the creative sphere", not only providing new horizons for the professional artist but also new avenues for the non-professional artist to discover his or her creative potential.[22]

4. The Problem of Infinite Reproducibility

However, as introduced in Chapter 1, the downside of digitisation is the ease with which a digital artwork can be copied, making it difficult to build a market around digital art and prove that a particular work is original or unique,[23] and the collection (and therefore the sale) of digital art has been a topic of debate since it began to register on the radar of the art market.[24] Questions arise as to how an artist creating digital art can obtain sufficient financial rewards for their work? How can an artist deal with provenance, ownership, distribution and control over digital artworks when digital art can be shared, completely devoid of attribution, compensation or context?[25] The value of art, at least when it comes to the traditional model, is inextricably linked to its economic value, but, given the issue of infinite reproducibility, the "scarcity equals value" model does not necessarily work when it comes to digital art.[26]

Artificial scarcity is a central feature of copyright and the creative industries (CIs).[27] Information, knowledge and cultural goods are by nature "non-rival" meaning that one person's use, enjoyment or consumption does not inhibit another's.[28] So, whilst the initial cost of producing a cultural good i.e., a digital artwork, is relatively high, the cost of reproducing the good through file formats or downloads is disproportionately low. Consequently techniques

[20] ibid.
[21] The Art Stoy (n 6).
[22] J. Bessette & Others, 'Trends and Anti-Trends in Techno-Art Scholarship' (2019) 8(3) Arts 120, https://doi.org/10.3390/arts8030120.
[23] C. Moshy, 'Understanding Digital Art & Blockchain' (*Medium.com,* 27 November 2019) https://medium.com/codexprotocol/understanding-digital-art-blockchain-the-basics-for-digital-artists-457eacbb23e6.
[24] C. Paul (2015) (n 11) 24.
[25] A. Dash (2021), 'NFTs Weren't Supposed to End Like This' (*The Atlantic*, 2 April 2021) https://www.theatlantic.com/ideas/archive/2021/04/nfts-werent-supposed-end-like/618488/.
[26] C. Paul (2015) (n 11) 24.
[27] R. O'Dwyer, 'Limited edition: Producing artificial scarcity for digital art on the blockchain' (2020) 26(4) Convergence 874-894 doi:10.1177/1354856518795097 876.
[28] ibid 876.

have to be employed to make goods "artificially" scarce in order to challenge their easy reproduction, adding additional costs and barriers to their circulation.[29]

Strategies to create artificial scarcity with digital art have included the use of Digital Rights Management Tools (DRMs), but with little success.[30] Digital art has proved resistant to the enclosures of cultural commons inflicted through the enforcement strategies of IP regimes.[31] Such strategies include for example the embedding of a digital watermark, encoding metadata and the use of low-resolution images,[32] all of which, whilst discouraging to casual art thieves, can still be removed by someone sufficiently skilled and determined.[33] In addition, various business models have been employed by artists in an attempt to make digital art more physical or scarce, such as producing limited editions of artworks,[34] framing digital artwork in physical spaces,[35] and collaborating with online galleries. However, online galleries often focus primarily on selling physical art, and emerging artists can also typically suffer the traditional art world's bias against newcomers.[36] Consequently, prior to NFTs, the opportunities to showcase and sell digital art were limited,[37] and the financial rewards digital artists could expect to derive from their creative labours generally not consistent with those available to an artist working in non-digital IRL formats.[38]

Kevin McCoy and Anil Dash, the inventors of the NFT concept in 2014 with Monegraph, did so from this assumption that due to the lack of control over digital artefacts, digital artworks cannot become the kind of scarce commodities that we associate with valuable artworks as they are too easy to reproduce and share.[39] As Dash observed, "in a realm where novelty, rarity and

[29] ibid 876.
[30] M. Zeilinger, 'Digital Art as 'Monetised Graphics'' (2018) 31 Philos.Technol.15-41 https://doi.org/10.1007/s13347-016-0243-1 16.
[31] ibid 19.
[32] Winged Canvas, 'Copyright Issues in Digital Art' (*Online Art School*, 29 March, 2024) https://www.wingedcanvas.com/single-post/copyright-issues-in-digital-art-how-to-protect-your-intellectual-property.
[33] D. Team, 'Legal Protection for your Digital Art' (*Daisie Blog*, 7 August 2023) https://blog.daisie.com/legal-protection-for-your-digital-art-a-comprehensive-guide/.
[34] Daata.art https://daata.art/about.
[35] Framed https://frm.fm.
[36] M. Franceschet & Others 'Crypto Art: A Decentralized View' (2021) 54(4) Leonardo 402 https://doi.org/10.1162/leon_a_02003.
[37] ibid.
[38] M. Zeilinger (n 30) 17.
[39] ibid 17.

exclusivity underpin so much (real and perceived) value of a work, copy and paste goes from being an act of creation to an act of destruction."[40]

However, before discussing the role that NFTs and CryptoArt play in relation to digital art, we first need to explain further the evolution of the blockchain.

5. The Advent of the Blockchain

A blockchain is essentially a special database structure.[41] It is a ledger of time-stamped information, but with the innovation that it is distributed and decentralised, meaning that it exists in many interconnected copies and without the need to trust a central authority, which profoundly alters the power dynamic around, and governance over, information.[42] In addition, structures have been built to reward and incentivise people to keep those interconnected copies of the ledger up to date through consensus mechanisms, but at its core blockchain technology is a way of relating to knowledge by time-stamping a record into a group of other records and then trusting a decentralised system, rather than a central authority, to keep that record.[43]

Even though the launch of Bitcoin in 2008 was the first time that many heard of blockchain technology, the basic scientific research for the blockchain emerged from a paper published in 1991 by Haber and Stornetta (a cryptographer and physicist respectively),[44] who were attempting to solve the epistemological problem of how we trust what we believe to be true in the digital age.[45] Their goal was to build a trustworthy registry of digital files without a central administrator and they developed the time-stamping structure we now call blockchain nearly twenty years before Nakamoto's Bitcoin Whitepaper in 2008.[46] As Haber and Stornetta detail in their paper, the ability to certify when a document was created or last modified is crucial for resolving issues such as intellectual property rights (IPR),[47] and they achieved this through creating a distributed and cryptographically secured time-stamped ledger, linked from one

[40] A. Dash (2014) 'A Bitcoin for Digital Art.'(*Medium*, 9 May 2014) https://medium.com/message/a-bitcoin-for-digital-art-8c7db719e495
[41] A. Whitaker (n 1) 21.
[42] S. Haber & W.S. Stornetta, 'How to time-stamp a digital document' (1991) 3 (2) Journal of Cryptology 99 https://link.springer.com/article/10.1007/BF00196791; S. Nakamoto, 'Bitcoin: A peer-to-peer electronic cash system' (2008) https://bitcoin.org/en/bitcoin-paper.
[43] A. Whitaker (n 1) 22.
[44] S. Haber & W.S. Stornetta (n 42)
[45] M. Franceschet 'The Sentiment of CryptoArt' *Computational Humanities Research Conference,* (November 2021, Amsterdam) http://ceur-ws.org/Vol-2989/long_paper10.pdf 310.
[46] S. Nakamoto (n 42)
[47] S. Haber & W.S. Stornetta (n 42)

block of transactions to the next.[48] Distinct from the cryptocurrencies that followed, Haber and Stornetta envisaged the use of blockchain beyond text:[49]

> *Of course, digital time stamping is not limited to text. Any string of bits can be time-stamped, including digital audio recordings, photographs, and full motion videos [..] time-stamping can help to distinguish an original photo from a retouched one*

Then, in 2008 Satoshi Nakamoto published a Whitepaper in which he described a solution to a seemingly unsolvable problem: how do you create an unbreakable, immutable ledger or database without it being maintained by a central authority?[50] The Whitepaper described a ledger which allowed for financial value to be securely transferred between parties (peers) without the involvement of a bank, thereby creating trust in a trustless network. His proposal was that a token (in this case Bitcoin) be used to represent the value on the ledger, and that the ledger be held together using cryptographic techniques, in an unbroken chain of transaction blocks: a blockchain.[51]

> *We have proposed a system for electronic transactions without relying on trust […] we proposed a peer-to-peer network using proof-of-work to record a public history of transactions that quickly becomes computationally impractical for an attacker to change if honest nodes control a majority of CPU power. The network is robust in its unstructured simplicity.*[52]

So Nakamoto took Haber and Stornetta's concept of a distributed ledger and added a financial incentive for maintaining the connected copies of the ledger.[53] His key development was the invention of mining, i.e. allowing people to win Bitcoin for solving mathematical puzzles tied to verifying transactions in a block,[54] and this is the reward that supports the tamper-resistant decentralisation first imagined by Haber and Stornetta.

Nakamoto's addition of mining ushered in a wave of cryptocurrencies, but blockchain technology has uses beyond cryptocurrencies, and in 2014 a start-up called Monegraph (i.e. "monetised graphics") emerged as the first start-up to provide artists with blockchain-backed

[48] A. Whitaker (n 1) 26.
[49] S. Haber & W.S. Stornetta (n 42).
[50] S. Nakamoto (n 42).
[51] P. Dakin, 'Should publishers care about blockchain?' (*InPublishing,* 23 May 2019) https://www.inpublishing.co.uk/articles/should-publishers-care-about-blockchain-14516.
[52] S. Nakamoto (n 42).
[53] A. Whitaker (n 1) 27.
[54] S. Nakamoto (n 42) 2.

tools to monetise their digital works.[55] A collaboration between the artist Kevin McCoy and Anil Dash,[56] Monegraph allowed creators, owners and collectors to document and verify the authenticity and provenance of digital artworks, so as to more efficiently secure the commercial value of the artworks.[57] Artists could record digital artworks on the blockchain specifying sales conditions and sharing rights for their individual works.[58] Monegraph authenticated digital artworks using cryptographic blockchain verification hashes which were then linked to the bitcoin blockchain and accessible to the public through Monegraph's "public catalogue", and through which artists could offer their digital artworks for sale, share information about them or track their virtual movement.[59]

Also in 2014, Vitalik Buterin introduced the Ethereum protocol, a smart contract structure that allowed for tokenisation.[60] Smart contracts are digital, computable, self-executing contracts where the performance and enforcement of contractual conditions occurs automatically, without the need for human intervention.[61] Drafted using source code and deployed on a programmable blockchain (e.g. Ethereum) they can be standardised and executed at nearly no cost, thereby democratising and dramatically speeding up the execution of a contract.[62] Ethereum generalised some of the scripting language of Bitcoin to be able to run many types of programs and over time these smart contracts have become standard.[63] One such standard being token type ERC-20 which is fungible, meaning that it functions as cash: i.e. two tokens are interchangeable, but in 2018 Ethereum launched the ERC-721 non-fungible token standard. First used in the CryptoCollectible game Cryptokitties,[64] the ERC-721 standard is now the basis of most NFTs and consequently CryptoArt, and is the standard that describes how to build unique tokens on the Ethereum blockchain. Ethereum has since created two more standards; ERC-1155 which allows for the minting of limited editions, and ERC-2981which adds a standardised, interoperable royalty function. The ERC-1155 standard also allow for the minting

[55] J. Constine, 'Monegraph Uses Bitcoin Tech' (*Techcrunch.com*, 9 May 2014) https://techcrunch.com/2014/05/09/monegraph/.
[56] A. Dash (2021) (n 25).
[57] M. Zeilinger (n 30) 16.
[58] A. Whitaker (n 1) 34.
[59] M. Zeilinger (n 30) 16.
[60] V. Buterin, *Etherum White Paper* (2013) https://blockchainlab.com/pdf/Ethereum_white_paper-a_next_generation_smart_contract_and_decentralized_application_platform-vitalik-buterin.pdf.
[61] N. Szabo 'Formalizing and Securing Relationships on Public Networks'. (*FirstMonday*, 2(9) 1 September 1997). http://firstmonday.org/ojs/index.php/fm/article/view/548/469.
[62] A. Wright & P. De Filippi 'Decentralized Blockchain Technology & the Rise of Lex Cryptographica' (10 March 2015) https://ssrn.com/abstract=2580664 4.
[63] A. Whitaker (n 1) 28.
[64] CryptoKitties https://www.cryptokitties.co.

of dynamic programmable NFTs (dNFTs), as opposed to static NFTs.[65] However, this research will focus on static NFTs as the majority of CryptoArt NFTs remain static as they represent digital assets with fixed attributes, rather than those with interactive attributes, and which are found more with for example in-game or sports NFTs.[66]

Although Ethereum remains the largest blockchain, the blockchain landscape today is vast and diverse with over a thousand distinct blockchains in existence,[67] and with four main types of blockchain networks: public, private, consortium and hybrid blockchains.[68] To date NFTs have focused around the Ethereum blockchain protocols (ERC-721 or ERC-1155). However, given developments in technology, and the advent of Ordinal NFTs, this increasing looks less likely to be the case. Ordinal NFTs offer the ability for users to directly inscribe data into an NFT. For example, Bitcoin Ordinals (BRC-20) allow users to embed data such as digital images onto Satoshis, Bitcoin's smallest unit.[69] As will be discussed, this has significant copyright implications, but the introduction of Bitcoin Ordinals expands the range of blockchain options for NFTs and also brings the credibility and stability of Bitcoin to the forefront of digital art and collectibles,[70] and they are showing rapid growth.[71] Equally, alternative blockchains such as Solana and Tezos are carving out niche communities and markets,[72] and Ethereum also now allows users to inscribe data within transactions.[73]

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[65] A. Uche, 'Static vs. Dynamic NFTs' (*MakeUseOf.com*, 25 April 2023) https://www.makeuseof.com/static-vs-dynamic-nfts-how-do-they-differ/; M. Shin, 'What are Dynamic NFTs?' (*ThirdWeb*, 19 December 2023) https://blog.thirdweb.com/dynamic-nfts/.

[66] NFTScan, 'The Emergence of Dynamic NFTs' (*Medium.com*, 7 September 2023) https://medium.com/nftscan/the-emergence-of-dynamic-nfts-a-new-era-for-digital-art-and-collectibles-a20ae13e0762.

[67] D. du Toit, 'How Many Blockchains Are There' (*Coinpaper.com*, 5 January 2024) https://coinpaper.com/2977/how-many-blockchains-are-there-unveiling-the-ecosystem-s-diversity.

[68] C. Campbell, 'What are the 4 different types of blockchain technology?' (*Techtarget.com*, 27 June 2024) https://www.techtarget.com/searchcio/feature/What-are-the-4-different-types-of-blockchain-technology#:~:text=There%20are%20four%20main%20types,benefits%2C%20drawbacks%20and%20ideal%20uses.

[69] Leah, 'Bitcoin NFTs Sealed 2023 with Record-Breaking Sales' (*NFTplazas.com,* 2 January 2024) https://nftplazas.com/bitcoin-nft-sales/.

[70] NATALEE, '2024: The year of alternative layer 1s rising in the NFT Realm' (*NFT Culture*, 2 January 2024) https://www.nftculture.com/nft-news/2024-the-year-of-alternative-layer-1s-rising-in-the-nft-realm-sol-tezos-and-sei-lead-the-charge/.

[71] Leah (n 69).

[72] NATALEE (n 70).

[73] M. Li, 'Things you need to know about Bitcoin Inscription' (*Forbes*, 31 December 2023) https://www.forbes.com/sites/digital-assets/2023/12/31/things-you-need-to-know-about-bitcoin-inscription/?sh=30242f432859.

In summary blockchain technology allows for the creation of cryptographically secure distributed ledgers which enable control among users rather than requiring a centralised database, thereby reducing costs and speeding up transactions;[74] enabling the development of new governance systems and decentralised autonomous organisations (DAOs).[75] To date the blockchain industry has lacked a "killer" application, but Bitcoin Ordinals may be a good test for future potential mass adoption,[76] and Elon Musk is firmly of the opinion that they are the future for NFTs and are paving the way for a revolution in the world of NFTs and digital art.[77]

6. Blockchain and CryptoArt as an Art Movement

Bitcoin emerged from the "cypherpunk" movement of the 1990s which combined a libertarian outlook with a commitment to powerful cryptography, and built up a community of passionate developers and users willing to contribute to open-source technology.[78] There exist many synergies between this community and the CIs, with many creators embracing blockchain and more recently NFTs. The art world has taken note of blockchain technology as, whilst commonly associated with cryptocurrencies, it has the potential to bring radical structural change to the arts and to the CIs,[79] with the creation of digital scarcity through "unique" editioned digital artworks. The development of NFTs has led some to suggest that NFTs are the solution to digital artists problems, enabling them to obtain remuneration for their works in order to mitigate for past lost income.[80]

An artwork has value when it is unique, and now digital art, with the help of blockchain technology and NFTs can, as "CryptoArt", be measured within the same parameters as physical or traditional art.[81] CryptoArt is the term commonly used to describe a rare digital artwork i.e.,

[74] C. Reed & Others, 'Beyond Bitcoin – legal impurities and off-chain assets' QMU, Research Paper No. 260/2017 https://ssrn.com/abstract=3058945 2.
[75] A. Wright & P. De Filippi (n 62) 1.
[76] M. Li (n 73).
[77] K. Cromley, 'Musk proposes revolutionary approach to NFTs: Direct Image Storage on Blockchain' (*Cointrust*, 31 December 2023) https://www.cointrust.com/market-news/musk-proposes-revolutionary-approach-to-nfts-direct-image-storage-on-blockchain; S. Goschenko, 'Elon Musk Criticizes NFTs, Gives Nod to Inscriptions: At least encode the Jpeg on the Blockchain'(*Bitcoin.com*, 28 December 2023) https://news.bitcoin.com/elon-musk-criticizes-nfts-gives-nod-to-inscriptions-at-least-encode-the-jpeg-on-the-blockchain/.
[78] A. Narayanan, *Bitcoin and Cryptocurrency Technologies.* (Princeton and Oxford: PUP) xxvii.
[79] A. Whitaker (n 1) Abstract
[80] I. Lapatoura, 'Creative digital assets as NFTs' (2021) 32(6) Ent.L.R. 169-172; EC (2016) *Proposal for a Directive of the EP and of the Council on Copyright in the Digital Single Market* (Brussels, 14 September 2016) COM(2016) 593 final.
[81] C. Moshy (n 23).

a limited edition collectible digital artwork that is cryptographically registered as an NFT on the blockchain.[82] Online NFT platforms such as *SuperRare*[83] and *KnownOrigin*[84] exhibit rare digital artworks. When an artist uploads a digital art work to an NFT platform, a token (i.e. an NFT) is "minted" i.e. generated and deposited in the artist's wallet. The token is permanently linked to the artwork and is a unique one-of-a-kind asset that represents ownership and authenticity of the underlying artwork,[85] and crucially is not mutually interchangeable i.e. fungible, unlike a cryptocurrency such as Bitcoin. The token is "unique" as even though the underlying digital artwork is available to all to view and download, there can only be one NFT associated with a particular digital artwork, even if it is one of a limited edition. Tokens can subsequently be exchanged on the blockchain, and are typically sold via auctions and purchased using cryptocurrencies. When sold they are transferred directly to the buyer's wallet, and blockchain technology ensures that each transaction is cryptographically secured, with the distributed peer-to-peer (P2P) nature of the blockchain also meaning that (usually) neither the funds nor the NFT are ever actually held by the platform or any other third party.[86]

So, CryptoArt allows for digital artworks to be bought, sold or collected by anyone in a decentralised manner. It relates to digital scarcity, in that by associating a digital artwork with an NFT it becomes scarce.[87] However, other than CryptoArt, NFTs are used in several specific applications that require unique digital items, as CryptoCollectibles or "Collectibles". In order to distinguish between CryptoArt and the broader term of Collectibles, CryptoArt is understood to be digital limited edition rare art, whereas Collectibles involve tokens that are often created algorithmically, e.g. CryptoPunks,[88] Cryptokitties,[89] or RarePepes,[90] and are traded within a specific platform or game or are more akin to trading cards such as NBA Top Shot.[91] Collectibles are often used as what is known as a profile picture or a PFP, and used by the collector on platforms such X.

[82] M. Franceschet & Others (n 36) 3.
[83] SuperRare https://superrare.com
[84] KnownOrigin https://knownorigin.io
[85] M. Franceschet & Others (n 36) 3.
[86] ibid 3.
[87] M. Franceschet (n 45) 311
[88] CryptoPunks https://www.larvalabs.com/cryptopunks
[89] CryptoKitties https://www.cryptokitties.co
[90] RarePepes https://rarepepes.com
[91] NBA Top Shot https://nbatopshot.com

CryptoArt as an art movement draws its origins from conceptual art, sharing the immaterial and distributive nature of artworks, and the rejection of conventional art markets and institutions.[92] It "stands on the shoulders of blockchains,"[93] conceptually linked to the values of decentralisation, democratisation and individual control that blockchain technology has come to represent, and which have been adopted by the wider crypto community.[94] It has cultivated a new form of digital native art collector, familiar with the concept of owning and valuing assets, and consequently expanded the limited opportunities for artists to showcase and sell digital art. [95]

7. The Rise and Fall of NFTs

After reaching peak "hype" and a total trading volume of $17 billion in January 2022, the interest in NFTs plummeted, with commentators observing a 97% drop in trading volume by September 2022.[96] This decline was primarily due to a loss of trust and confidence in the market with the main challenge being issues experienced by collectors surrounding the quality and originality of NFTs when distinguishing between genuine artistic expression and opportunistic cash grabs, with many NFTs simply copied or stolen from other sources without permission or attribution, or generated by algorithms or bots with minimum human input.[97] Collectors also realised that owning an NFT did not necessarily mean owning the underlying digital asset or having exclusive rights to it, and many voiced ethical concern regarding the environmental impact (i.e. energy consumption) of NFTs.[98]

However, NFTs, and in particular CryptoArt, are far from dead.[99] Whilst the value and number of transactions has certainly declined since 2021, data on sales shows the market settling at a lower but more stable level in 2023,[100] suggesting that rather than upending the art trade or completely disappearing NFTs will find their niche within the art market, remaining

[92] M. Franceschet (n 45) 311.
[93] M. Franceschet & Others (n 36) 3.
[94] ibid 18.
[95] ibid 18.
[96] The Rise and Fall of NFTs: What Happened and What's Next? (*CoinMarketCap*) https://coinmarketcap.com/academy/article/8728797c-3d26-4864-ad19-b35ba777fc81.
[97] ibid.
[98] ibid.
[99] Daily Hodl Staff (*The Daily Hodl*, 21 October 2024) https://dailyhodl.com/2024/10/21/macro-guru-raoul-pal-says-nfts-arent-dead-predicts-big-comeback-for-crypto-sector/.
[100] Arts Economics, *The Art Market Basel & UBS Art Market Report 2024* https://theartmarket.artbasel.com/download/The-Art-Basel-and-UBS-Art-Market-Report-2024.pdf 33.

particularly relevant among digital art enthusiasts and collectors,[101] with a survey recording how 33% of high net-worth art collectors worldwide purchased art via NFT platforms in the first half of 2023.[102]

As evidenced in Figure 1 below, from a peak of nearly $2.9 billion in 2021, sales of Art NFTs on NFT platforms outside of the art market declined for two years, reaching $1.2 billion in 2023, down by 51% year-on-year but still over 60 times the size of the market in 2020 ($20 million). After outperforming Art NFTs in 2022 to peak at almost $18 billion, the collectibles segment also saw a large fall in sales in 2023 to $6.3 billion, down by 64% year-on-year, with much of the purely speculative activity which had dominated these platforms losing momentum. In 2023 collectibles still made up the dominant share of sales by value, accounting for 84% of these two segments versus 16% for Art NFTs,[103] although, and as demonstrated in Figure 2, the share of sales of Art NFTs by value increased from 2022 when it was only 12%.

[101] Statista, *NFT art market – statistics & Facts* (*Statista Research Department*, 9 August 2024) https://www.statista.com/topics/7626/crypto-art/#topicOverview.
[102] Statista, *Leading channels used by high-net worth (HNW) art collectors* (*Statista Research Department,* 28 October 2024) https://www.statista.com/statistics/1269344/leading-channels-used-by-high-net-worth-collectors-to-purchase-art-worldwide/.
[103] Arts Economics (n 100) 19 para 11.

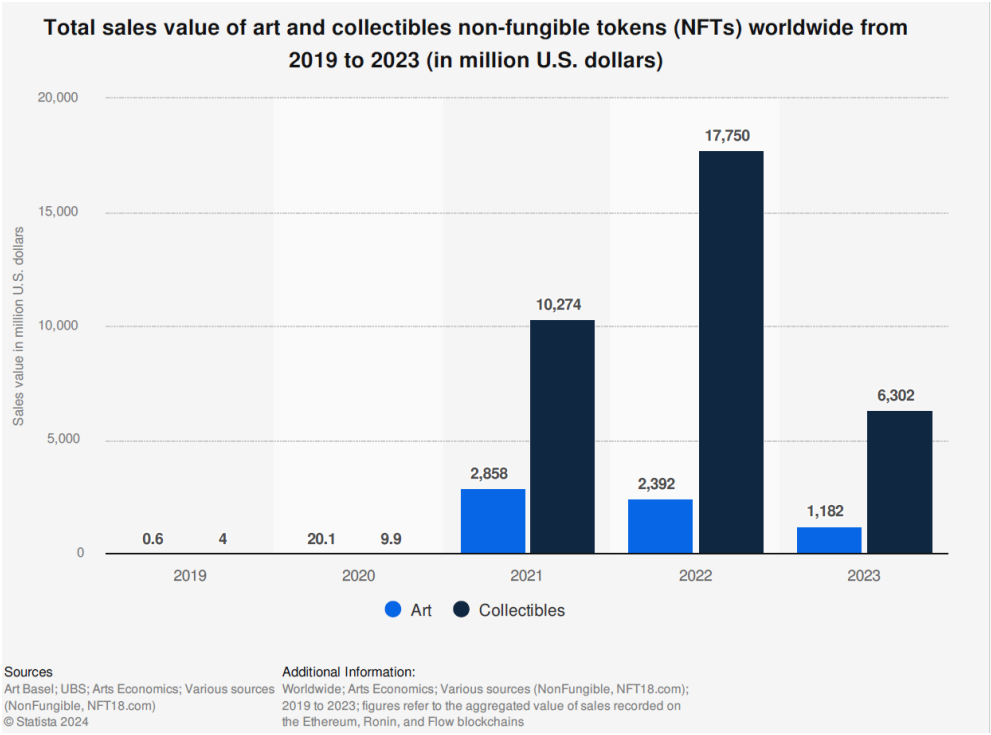

Figure 1: Sales Value of Art and Collectible NFTs worldwide 2019-2023.[104]

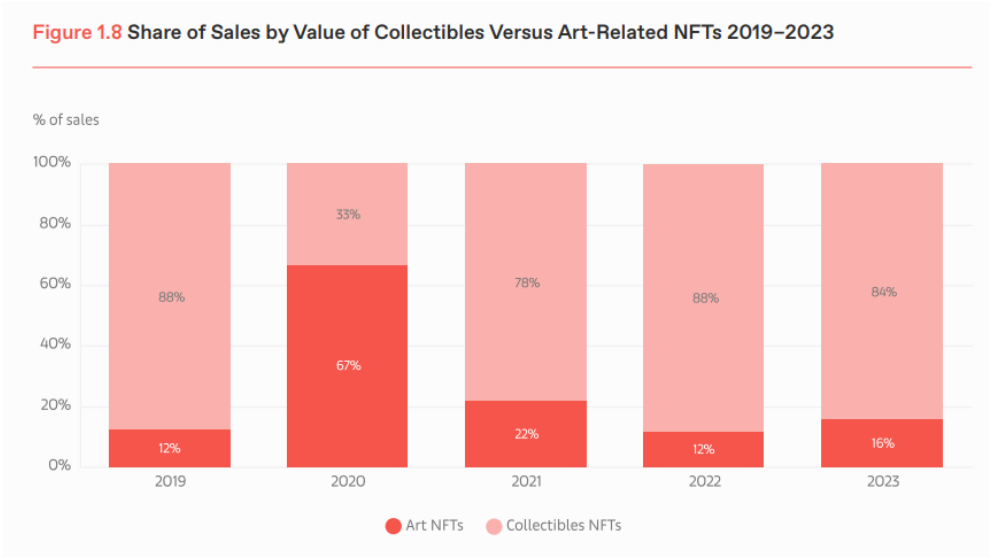

Figure 2: Share of Sales by Value of Collectibles Versus Art Related NFTs 2019 to 2023[105]

So, whilst Art NFTs have seen a decline, they have seen less of a decline than collectibles, and sales of Art NFTs in 2023 was still $1.2bn, the equivalent of nearly 2% of the total global art

[104] Statista, *Total sales value of art and collectibles NFTs worldwide from 2019 to 2023* (*Statista Research Department,* 18 March 2024) https://www.statista.com/statistics/1299636/sales-value-art-and-collectibles-nfts-worldwide/.
[105] Arts Economics (n 100) 34

market, which was estimated to be worth $65bn in 2023.[106] Art NFT sales that take place via the NFT platforms are not included in this figure of $65bn, as they occur outside of the traditional galleries, dealers and auction houses.[107] Even still, as predicted by Zeilinger[108] and acknowledged by the Art Basel & UBS Art Market Report 2024,[109] CryptoArt, or Art NFTs as it is termed here, has clearly achieved legitimacy and reach within the traditional art world.[110] Sotheby's and Christies both have dedicated Digital Art and NFT departments,[111] and Christies is famous for auctioning "Everydays: the first 5,000 days" an NFT by Mike Winkelmann, the digital artist known as Beeple, for a record $69 million in March 2021.[112]

Whilst undoubtably NFTs have suffered teething problems, are subject to volatility. and have accrued their fair number of detractors, they still retain the potential to empower artists. Blockchain technology remains a fast developing technology and NFTs, and in particular CryptoArt, have weathered the storm and have a major role to play in the revolutionising the future of the CIs.[113]

8. Conclusion

Blockchain provides the means to assert ownership over an original digital artwork through a system of verifiably unique digital assets.[114] Developed and known as NFTs, the idea behind NFTs was, and is, profound. Technology should enable artists to exercise control over their work, to more easily sell it, and to more strongly protect against others appropriating it without permission, and McCoy and Anil devised their technology specifically for artistic use.[115]

CryptoArt massively expands the previously limited opportunities that digital artists, especially emerging and early career digital artists, had to showcase and sell their art.[116] Aside from the

[106] ibid 17.
[107] ibid 33.
[108] M. Zeilinger (n 30).
[109] Arts Economics (n 100).
[110] M. Zeilinger (n 30); M. Franceschet & Others (n 36) 19.
[111] Sothebys Digital Art https://www.sothebys.com/en/departments/digital-art; Christies Digital Art & NFTs https://www.christies.com/en/events/digital-art-and-nfts/overview.
[112] Associated Press, 'Christie's auctions 'first digital-only artwork' for $70m' (*The Guardian,* 12 March 20201) https://www.theguardian.com/artanddesign/2021/mar/11/christies-first-digital-only-artwork-70m-nft-beeple
[113] John, 'NFT Revolution' (*Journee Mondiale*, 19 October 2024) https://www.journee-mondiale.com/en/nft-revolution-how-digital-art-tokens-are-reshaping-the-65-billion-creative-economy/.
[114] A. Dash (2021) (n 25).
[115] ibid.
[116] M. Franceschet & Others (n 36) 19.

ability to tokenise digital art, NFT platforms connect artists with buyers, simplify the sales process and eliminate many risks involved with online sales.[117] An artist has full price control, is exempt from returns, does not have to ship or insure an artwork, receives payment immediately, can sell internationally and choose to remain anonymous.[118] New communities are also arising around NFT platforms, enabling exchange and communication between artists, collectors, enthusiasts and platform founders and leading to collaboration and the creation of multidisciplinary art collectives that lead to real-life projects.[119]

However, issues and complexities remain. NFT platforms need to improve their technical and operational aspects, and NFTs need to evolve to adapt to the changing market conditions and consumer preferences.[120] As is evident from the empirical research in Part III, there is a need for evolution and standardisation and the market still has a long way to go. Collectors and artists alike need to be able to detect forgeries across the CryptoArt world, and whereas NFT ERC-721 standards facilitate the creation of CryptoArt, they do not enforce the rules beyond token schematics.[121] For example, secondary sales are platform specific, as is the payment of a percentage on all secondary sales to artists which needs to be comprehensively extended across all platforms.[122]

Regarding the broader implications of how the law treats digital assets and CryptoArt, and more specifically issues of copyright, the following Chapter 3 discusses how NFTs do not fit neatly within existing copyright law, and how issues surrounding rights, infringement and platform liability also need to be resolved in order that CryptoArt may achieve its full potential when it comes to supporting artists, and more broadly the CryptoArt movement.

Artists will continue to respond to the on-going digitisation experience by making work that is digitally based, and pursing ways to monetise their work. Collectors and supporters will go where artists lead; but currently none of this is for the faint-hearted collector who has not done their research or who lacks sufficient technical know-how. NFTs are unregulated, risky and require considerable knowledge and research, both from the point of view of the purchaser and

[117] ibid 19.
[118] ibid 20.
[119] ibid 20.
[120] The Rise and Fall of NFTs (n 96).
[121] M. Franceschet & Others (n 36) 29.
[122] ibid 23.

the digital artist. In addition, as NFTs are generally bought and sold using cryptocurrencies, they are also subject the volatility of the cryptocurrency market, which fluctuates wildly and leads to artists revising prices. [123]

So, where will CryptoArt sit? Will it be regulated and assimilated into intellectual property (IP) regimes i.e., will the law catch up and provide a regulatory framework for NFTs and will this be a positive thing for the development of the market and digital artists alike? Or, will the market self-organise and self-regulate in order to develop standards and protect artists and collectors, or will it be assimilated into the pre-existing traditional artworld, thereby maintaining the status quo of the gatekeepers? Or, will NFTs and CryptoArt become a whole new way of commercialising digital art beyond the reaches of IP, as an ideological anti-commodity digital art movement, or might CryptoArt simply fade away as the latest trend? It is also possible that NFTs are only just the precursor to what will come next in terms of protecting and commercialising digital assets.

Some see the development of NFTs as an opportunity for artists to protect their work from misuse and appropriation, however as argued by O'Dwyer the aim of NFTs is not usually to introduce stronger restrictions over use or a new form of DRM, but rather to create a new kind of tradeable digital asset.[124] This research argues that NFTs create a new market for artists and a way for them to earn compensation for their efforts, rather than a way for them to restrict the use or distribution of their works on the internet. That is not to say that copyright is not still of importance, but as summarised by O'Dwyer,

> *In turn this trend implies a different operation of IPR with respect to the digital culture, one where alienation rather than exclusion is significant and a different operation of scarcity with respect to digital cultural goods, where their free circulation is not necessarily antiethical to profit.*[125]

[123] ibid 23.
[124] R. O'Dwyer (n 27) Abstract.
[125] ibid Abstract.

Chapter 3: NFTs, CryptoArt and the Law

1. Introduction

Having discussed the history of digital art and the development of NFTs and CryptoArt in the previous Chapter, this Chapter turns to the current legal and copyright issues that arise with NFTs and CryptoArt. It begins with a brief summary of current legal issues other than copyright, before then focussing on copyright, and concluding with a discussion on the property nature of CryptoAssets. The aim of this Chapter is to outline current legal issues and to introduce copyright issues highlighted in the literature.[1] Copyright issues will then be analysed in more depth in Part IV, which turns to how copyright can be interpreted and applied to NFTs.

2. Legal Issues other than Copyright

Even though the primary focus of this research is copyright, NFTs do raise numerous legal questions beyond copyright, namely with regard to securities, property, contract, and crime.[2]

2.1 Securities

It is possible that some NFTs could be classed as security tokens, so bringing them within securities law frameworks. The EU's Regulation on Markets in CryptoAssets (MiCA) defines a CryptoAsset as a digital representation of value or rights that may be transferred and stored electronically, using distributed ledger or similar technology.[3] MiCA is intended to provide for the comprehensive regulation of CryptoAssets not yet covered by EU financial law,[4] and generally references three main categories of token (asset-referenced token, e-money token and other CryptoAssets) and NFTs would likely fall into the "catch-all" category of other

[1] B. Bodo & Others, 'The Rise of NFTs: these aren't the droids you're looking for' (2022) 44(5) EIPR 265-282; A. Guadamuz, 'The Treachery of Images: NFTs and Copyright' (15 August 2021) JIPLP, jpab152 https://doi.org/10.1093/jiplp/jpab152; M. Noh & Others, 'GM! Time to Wake UP and Address Copyright and Other Legal Issues Impacting Visual Art NFTs' (2022) 45(3) JLA https://ssrn.com/abstract=4028116.
[2] P. Caglayan Aksoy & Z. Ozkan Uner, 'NFTs and Copyright: Challenges and Opportunities' (2021) 16(10) JIPLP 1115 https://doi.org/10.1093/jiplp/jpab104.
[3] Regulation (EU) 2023/1114 of the EP and of the Council of 31 May 2023 on markets in crypto-assets.(MiCA) Art 3(1).
[4] Skadden LLP, 'Regulatory Approaches to NFTs in the EU and UK' (*Skadden.com*, 15 June 2021) https://www.skadden.com/insights/publications/2021/06/regulatory-approaches-to-nonfungible-tokens#main-content.

CryptoAssets.[5] Although Recital 10 MiCA does state that the regulation does not apply to CryptoAssets that are non-fungible and, as with this research, generally associated with digital art, some claim that it is possible for NFTs to be considered a security, such as an investment contract.[6] Whilst beyond the scope of this research, this is an area that does need to be highlighted, particularly when considering legislative developments in the UK, EU and US.[7] In the US the US Securities and Exchange Commission (SEC) recently threatened to sue *OpenSea* over the sale of unregistered securities, effectively arguing for the classification of NFTs as securities,[8] although it has since withdrawn this action.[9]

This research will assume that, for the time being, an NFT created by a digital artist represents a single object i.e. digital art, which is not tied to any sophisticated smart contract and which does not qualify as a financial instrument and in particular not as a "transferable security," so as such is outside any potential regulation.[10]

2.2 Property

Ownership, or "property" is a legal concept and property rights of all sorts, e.g. in land or shares, give their beneficiaries a monopoly over a resource.[11] Accordingly, a proprietor or owner of property can exercise exclusive possession or control over an object. Intellectual property (IP) creates a similar reservation of rights for its beneficiaries, but copyright is distinct from ownership, i.e., "ownership of a copyright is distinct from ownership of any material object in which the work is embodied."[12] Collecting physical artworks is relatively straightforward conceptually, and a collector is said to "own" a purchased work.[13] The owner

[5] ibid.
[6] P. Caglayan Aksoy & Z. Ozkan Uner (n 2) 1120; Y. Guseva, 'The Economic Reality of NFT Securities' in N. Geslevich Pakin, *The Cambridge Handbook of Law and Policy for NFTs* (CUP, 2024) 63.
[7] J. Rizzo, 'The Future of NFTs Lies With the Courts' (*Wired.com*, 3 April 2022) https://www.wired.com/story/nfts-cryptocurrency-law-copyright/#main-content.
[8] J. Lawson-Tancred, 'OpenSea Prepares for Legal Battle' (*Artnet.com*, 2 September 2024) https://news.artnet.com/art-world/opensea-nft-sec-notice-2530409; Practical Law Finance, 'SEC Push to Regulate NFTs.' (*Practical Law*, 25 September 2024) https://uk.practicallaw.thomsonreuters.com/w-044-3330?transitionType=Default&contextData=(sc.Default)&firstPage=true.
[9] J. Lazurek, 'SEC drops investigation into OpenSea' (*FXStreet.com*, 24 February 2025) https://www.fxstreet.com/cryptocurrencies/news/sec-drops-investigation-into-opensea-no-action-on-nfts-202502240953
[10] EU Blockchain Observatory and Forum, 'NFT – Legal Token Classification' (*EUBlockchainforum.eu,* 2021) https://blockchain-observatory.ec.europa.eu/publications/nft-legal-token-classification_en.
[11] S. Goossens, 'Digital ownership, the birth of a new concept' (*Reedsmith.com,* 12 November 2021) https://www.reedsmith.com/en/perspectives/2021/11/digital-ownership-the-birth-of-a-new-concept.
[12] Copyright Act of 1976, codified in Title 17 of the United States Code (17 USC) §202.
[13] M. McConaghy & Others, 'Visibility and digital art: Blockchain as an ownership layer on the Internet' (2017) 26(5) *Strategic Change* 461 https://doi.org/10.1002/jsc.2146 463.

of the purchased work acquires the physical title to the work and accordingly the right to possess, enjoy and crucially dispose of, i.e. sell, the work. However, unless legally transferred, a purchaser of a painting does not acquire the copyright to that painting. So, whilst they are permitted to display and sell the painting, they cannot reproduce the work, unless such reproduction is covered by a fair dealing exception,[14] or is with specific authorisation i.e. a licence from the copyright holder. (Incidentally, reproduction of art works by the rightsholder, so typically the artist, is common in the artworld, with limited editions reproduced and distributed by artists to collectors to generate revenue.[15])

However, digital art has created an entirely new domain, where digital information is exchanged rather than physical artefacts.[16] As discussed in Chapter 2 the normalisation of the free and easy sharing of digital works and the prevalence of copyright infringement online creates challenges establishing the provenance and authenticity of digital art, and for the trading of digital art in a manner that permits resale.[17] Artists have attempted to incorporate physicality into their art, e.g. by saving work to a physical, so property, format, such as a USB stick, embedding the work into an object or making the digital idea into a physical object e.g. printing, but none is wholly satisfactory as the physicality aspect is artificially created for art that is naturally digital.[18] CryptoArt is the latest technological development which attempts to emulate this physicality aspect.

Property law is an area that needs to be considered when considering aspects of "ownership" with NFTs, and, as discussed later in §6 of this Chapter, the classification of CryptoAssets and NFTs within property law is a current issue.

2.3 Contract

Issues involving contract law also need to be considered, namely the status and validity of smart contracts together with issues of form in the fact that they are not in writing. However, this research assumes that courts will find smart contracts to be legally binding, at least for the purposes of transferring ownership of NFTs. The assumption is that the law will recognise

[14] CDPA 1988 Chapter III.
[15] M. McConaghy & Others (n 13) 464.
[16] ibid 464.
[17] M. Osberg, 'Would you pay $2,000 for a GIF?' (*TheVerge.com,* 17 October 2013) https://www.theverge.com/2013/10/17/4844814/would-you-pay-2000-for-a-gif.
[18] ibid.

smart contracts as legally binding where circumstances beyond the code warrant such treatment based on existing legal doctrines, as in the case of a creator offering an NFT for sale, a buyer accepting that offer and the parties exchanging consideration,[19] meaning that parties may need to rely on traditional legal methods in order enforce a smart contract. This brings us on to the general issue of jurisdiction. Due to the anonymity or pseudonymity of blockchains it can be challenging to establish where a lawsuit, whether for breach of contract, copyright infringement or otherwise would be filed, the applicable law and the identity of the creator or current owner of an NFT.[20]

2.4 Crime

Finaly, crime with NFTs is also an issue,[21] with numerous examples of fraud and money laundering and NFT scam "rug pull" schemes.[22] Such cases are not so relevant here, as this research focuses on copyright issues. However, "theft" of NFTs is increasingly relevant,[23] even if, from a digital artist's point of view, it is considered through the lens of copyright infringement. In terms of indirect liability within the UK, s 23 CDPA provides that a defendant may be held indirectly liable for, inter alia, possessing, dealing or distributing an article which is, and which he knows or has reason to believe is, an infringing copy. S 107 CDPA adds how a defendant may incur criminal liability for such an offence. However, given the burden of proof required to establish such a claim, the majority of copyright infringement claims remain as civil actions.

3. Copyright Protection of Artistic Works

This section focuses on copyright issues in relation to artistic works, as typically the digital content linked to an NFT relates to creative expression i.e. digital art. After outlining how copyright currently protects artistic works, the next section (§4) discusses how copyright applies to the minting and trading of NFTs, specifically CryptoArt NFTs.

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[19] A. Steiner, 'The Paper It's Printed On: NFTs, Ownership and Conceptual Art' (30 December, 2021) https://ssrn.com/abstract=3997352 7.
[20] P. Aksoy & Z. Ozkan Uner, (n 2)1120.
[21] L. Beckett, 'Huge mess of theft and fraud; artists sound alarm as NFT crime proliferates' (*The Guardian,* 29 January 2022) https://www.theguardian.com/global/2022/jan/29/huge-mess-of-theft-artists-sound-alarm-theft-nfts-proliferates.
[22] T. Akers (*The Art Newspaper,* 4 November 2024) https://www.theartnewspaper.com/2024/11/04/undeadapes-nfts-rug-pull-fraud-money-laundering-guilty.
[23] L. Beckett (n 21).

3.1 Copyright in Artistic Works

This research focuses on "fine art"; whether tangible or produced using digital technology. Whilst UK copyright law makes no express distinction between works of fine art and other artistic works in affording copyright protection, the Oxford English Dictionary defines the fine arts as those "appealing to the mind or sense of beauty,"[24] and distinguishable from more utilitarian or mass produced items.[25] Here we compare a tangible "high-end" fine art work, i.e., a painting, drawing or print which is unique or one of a limited number, to the intangible digital art equivalent, i.e., a unique or one of a limited number, digital and fine artwork.

In the UK original artistic works include graphic works which include any painting, drawing, diagram, map, chart or plan.[26] So, provided that they are original, both physical and digital artworks are automatically protected by copyright.[27] The EU standard of originality is low under the existing case law of the CJEU, comprising several judgments from *Infopaq*[28] to *Brompton Bicycle*.[29] The test for originality (and currently applied in the UK) is that a work is the author's own intellectual creation, requiring that the work "reflects the personality of its author, as an expression of his free and creative choices",[30] and as noted by Bodo, "Even pixel-based artworks can meet the requirements of originality and amount to a sufficiently precise expression of the 'free and creative choices' of their (human) authors, as required by the CJEU."[31]

An author in relation to the work is the person who creates it,[32] so here it is assumed to be either the artist who creates a tangible artwork or a digital artist who creates a digital artwork. But what of computer-generated digital art? As defined by the CDPA a computer-generated work means a work that has been generated by a computer in circumstances such that there is no human author of the work.[33] In the UK, the author of a computer-generated artwork is the person by who the arrangements necessary for the creation of the work are undertaken,[34] so

[24] The Concise Oxford English Dictionary (8th Edition, OUP 1990).
[25] S. Stokes (2021) *Art and Copyright* (3rd edn, Hart 2021) 1.
[26] CDPA s 4.
[27] CDPA s 1(a).
[28] Case C-5/08 *Infopaq International A/S v Dankse Dagblades Forening* EU:C:2009:465.
[29] Case C-833/18 *SI v Chedech/Get2Get* EU:C:2020:461.
[30] Case C-604/10 *Football Dataco Ltd and others v. Yahoo: UK Ltd* ECLI:EU:C:2012:115, 38.
[31] B. Bodo & Others (n 1) 275.
[32] CDPA s 9.
[33] CDPA s 178.
[34] CDPA s 9(3).

typically the programmer, and such works are currently protected within the UK, albeit for a shorter duration.[35] This research assumes that the underlying digital art associated with CryptoArt is protected by copyright, however as discussed in the following section, this situation will need to be monitored, as it may not always remain the case.

3.1.1 Is Generative Art Protected by Copyright?

Developing the above issue, it is important to mention Generative Art, a current issue when considering the interaction between copyright and NFTs, and which could have a significant impact on NFTs, as it has been shown to be the main focus among collectors, with around half of surveyed collectors being interested in such works.[36] This research assumes that copyright exists in the underlying artwork which is subsequently linked to an NFT as CryptoArt, but as discussed here, this might not always remain the case.

Firstly, what actually is "Generative Art"? Generative Art is a type of computer-generated digital art that is produced randomly, whether by using autonomous machines or algorithms.[37]

> *Generative art refers to any art practice where the artist uses a system, such as a set of natural language rules, a computer program, a machine, or other procedural invention, which is set into motion with some degree of autonomy contributing to or resulting in a completed work of art.*[38]

Whilst not a condition for copyright protection, US law provides for the permissive registration of copyright,[39] requiring such registration for a rightsholder to be able to commence legal action for copyright infringement.[40] In 2022 the USCO (Review Board) refused registration for an artwork, "*A Recent Entrance to Paradise*".[41] The application, submitted by Stephen Thaler, stated that the work had been autonomously created by a computer algorithm running on a machine, citing the "Creativity Machine" as the author. The application was rejected on the basis that "[US] Copyright Law only protects 'the fruits of intellectual labour' that are

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[35] CDPA s 12(7).
[36] Statista, *Main collecting focus for digital art* (*Statista Research Department,* 10 December 2024) https://www.statista.com/statistics/1481718/digital-art-collecting-focus-global-art-collectors/.
[37] M. Apthorpe, 'What is Generative Art?' (*Agoradigital.art*, 12 February 2021) https://agoradigital.art/blog-what-is-generative-art/.
[38] P. Galanter, 'What is Generative Art?' (*PhilipGalanter.com*, 2003) http://philipgalanter.com/downloads/ga2003_what_is_genart.pdf.
[39] 17 USC §408.
[40] 17 USC §411.
[41] US Copyright Review Board: *Second request for Reconsideration for Refusal to Register a Recent Entrance to Paradise* (*Copyright.gov*, 14 February 2022) https://www.copyright.gov/rulings-filings/review-board/docs/a-recent-entrance-to-paradise.pdf .

'founded in the creative powers of the [human] mind'",[42] i.e. the Board held that the Creativity Machine did not meet the statutory requirements of an author, consistent with the USCO's position that an author must be a human being. Statutorily in the US copyright in a work "vests initially in the author or authors of the work."[43] While "author" is not explicitly defined, the USCO has consistently taken the position that the author must be a human being,[44] and the Board's decision reaffirmed this requirement for human authorship.[45]

So, although this is a decision of the USCO Review Board, and no case has yet been decided in the US on the specific issue of AI-creativity, this refusal together with guidance from previous cases indicates that, at least in the US, human authorship is necessary to support a copyright claim.[46] This position is in line with international law. Whilst the Berne Convention does not define who can be regarded as an author, from its text and historical context it appears that only natural persons who created the work can be regarded as authors.[47] The CJEU has yet to specifically tackle the question. However case law from the CJEU suggests that its understanding of originality presupposes a personal touch,[48] and the making of free and creative choices is premised on the idea that authors, from a copyright point of view, need to be human.[49]

However, and as discussed in the previous section, this is not currently the case in the UK where computer-generated works created by non-human authors can qualify for protection with protection lasting for 50 years from the date the work is made.[50] Copyright in the UK protects works generated by a computer where there is no human creator. The "author" of a computer-generated work is defined as "the person by whom the arrangements necessary for the creation of the work are undertaken".[51] So, it can be assumed that in the UK "*A Recent Entrance to Paradise*" would have automatically qualified for copyright protection, with the author being

[42] ibid.
[43] 17 USC §201(a).
[44] *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 58 (1884).
[45] F. Graves, 'Sorry, your NFT is Worthless' (*IPWatchdog.com*, 20 February 2022) https://www.ipwatchdog.com/2022/02/20/sorry-nft-worthless-copyright-generative-art-problem-nft-collections/id=146163/.
[46] E. Rosati, 'USCO refuses to register AI-generated work' (*IPKat*, 17 February 2022) https://ipkitten.blogspot.com/2022/02/us-copyright-office-refuses-to-register.html.
[47] ibid.
[48] Case C-145/10, *Eva-Maria Painer v Standard VerlagsGmbH* ECLI:EU:C:2011:798.
[49] Case C-833/18, *SI and Brompton Bicycle Ltd v Chedech/GetGet* ECLI:EU:C:2020:461.
[50] CDPA s 12(7).
[51] CDPA s 9(3).

Stephen Thaler, even though he did not actually create the work but made the arrangements necessary for the creation of the work.

We have seen that UK law protects original artistic works,[52] and how for a work to be original it must be the author's own intellectual creation, meaning that the author has made free and creative choices and the work has their "personal touch".[53] So, from a legal perspective, a computer-generated work must also be original if it is to receive protection. However, the legal concept of originality has been defined with reference to human authors and characteristics such as personality, judgement and skill. It has therefore been argued that the law in relation to computer-generated works in the UK is unclear and contradictory, as it is unclear how a computer-generated work can past this test of originality.[54]

Questions have been raised in the UK about the balance in the copyright system between the protection of human works and AI works.[55] AI is playing an increasing role in technical innovation and artistic activity, and the UK Government asked whether computer-generated works should be protected at all and if so, how they should be protected, before concluding at the time that it planned to make no changes to the law.[56] So, computer-generated works continue to be protected in the UK, although the UK government has recently published its latest Consultation on AI and copyright, and once again this question is up for discussion.[57]

But, what are the implications of this position for NFTs and CryptoArt? The assumption with CryptoArt NFTs is that copyright subsists in the underlying artwork, but this may not always be the case where the digital art is "generative" i.e. a form of computer-generated art, as copyright protection might not, depending on location, always extend to computer-generated art. The USCO (Review Board) decision leaves open the key issue of, "under what circumstances human involvement in the creation of machine-generated works would meet

[52] CDPA s 1(1)a.
[53] IPO Consultation Outcome, *Artificial Intelligence and IP: copyright and patents* (*Gov.uk*, 28 June 2022) https://www.gov.uk/government/consultations/artificial-intelligence-and-ip-copyright-and-patents/artificial-intelligence-and-intellectual-property-copyright-and-patents#copyright.
[54] ibid.
[55] ibid.
[56] ibid.
[57] IPO Open Consultation. *Copyright and AI* (*Gov.uk,* 17 December 2024) https://www.gov.uk/government/consultations/copyright-and-artificial-intelligence

the statutory criteria for copyright protection?"[58] An application to the USCO has recently been successful with this argument, with the USCO confirming that sufficient human involvement had occurred to merit protection, but leaving the conclusion that applications for copyright in the US will now be decided on a case by case basis.[59] So, where and how do you draw the line between digital art and computer-generated art? If protection for computer-generated works is removed or reduced, how do you prevent someone from claiming that a work created by AI is in fact created by them in order to gain copyright protection? And what happens when a creator has assistance from AI in creating a digital artwork? If the work expresses original human creativity will it benefit from copyright protection like a work created using any other tool? UK law also provides for "works of joint authorship" meaning works produced by the collaboration of two or more authors in which the contribution of each author is not distinct from that of the other author or authors.[60] But, what happens if one of the authors is AI?

It should be noted that the range of autonomous systems that can be used to generate art is vast.[61] For example, a collection of NFTs, known as "collectibles", typically consists of a limited number of individual NFTs e.g. a cartoon style collection, and starts with an artist creating a base frame or outline of a character's head (e.g. an ape, punk or cat).[62] The artist then creates a set of unique attributes, before then instructing a computer program to create content using certain algorithms to generate the larger collection of works autonomously.[63] Are these protected by copyright? Currently in the UK the answer is yes, but in the US – possibly not. Likewise, Art Blocks[64] allows a user to select a collection, and in exchange for a cryptocurrency payment, the platform will algorithmically generate on-demand a new and unique version of content from the selected collection. Is this covered by copyright? Guadamuz argues that if we interpret the USCO's decision narrowly, then generative images and in particular those associated with "collectibles" would not be protected by copyright in

[58] J. Maisel, 'Human Creativity v. Machine Autonomy in Identifying Copyright Authors of Generative NFTs' (*JDSUPRA.com,* 24 February 2022) https://www.jdsupra.com/legalnews/human-creativity-v-machine-autonomy-in-8481196/.
[59] A. Schrader (*Arnet.com*, 21 February 2025) https://news.artnet.com/art-world/invoke-snags-first-ai-image-copyright-2608219.
[60] CDPA s 10(1).
[61] D. Pereira, 'Generative Art and NFTs' (*buycryptonft.com,* 31 March 2021) https://buycryptonft.com/generative-art-and-nfts-where-is-the-real-value-d58f999201ad.
[62] F. Graves (n 45).
[63] ibid.
[64] ArtBlocks, https://www.artblocks.io.

the US, as they would struggle to demonstrate sufficient human authorship, and would therefore be in the public domain.[65] This uncertainty as to whether AI generated images are in fact copyright protected prompted the plaintiff in a recent US case involving the Bored Ape Yacht Club (BAYC), *Yuga Labs v Ryder Ripps*[66] to exclude a copyright claim, relying instead on trademark infringement.[67]

Digital artists therefore need to be aware of the potential limitations of copyright protection for generative works of art, both when creating artworks and taking action for the minting of unauthorised NFTs. Applicants looking to secure copyright protection in the US for generative content would be advised to name a human author and identify (and preferably document) the contributions that human made in defining the creative output generated by the computer program.[68] Although copyright registration is not required in the UK, such documenting of human contribution is also to be recommended as it may well be of increasing relevance when seeking to establish copyright protection.

This research assumes that as CryptoArt copyright subsists in the underlying digital artwork used to mint an NFT. But the point here is that if this is not the case then copyright law does not apply, either in terms of rights transferred or infringement actions.

However, assuming that an artwork does in fact qualify for protection, what rights are granted in an artistic work, whether physical or digital?

3.2 What Rights are Protected in an Artistic Work?

An author creates an artistic work which affords them, as a rightsholder, legal protection to control the use by others of the fruits of their creativity and without which there would be no incentive to invest time and effort in creative work.[69] They will be entitled to the protection of the work under the law of copyright and related rights,[70] and most legal systems recognise two elements to such protection: economic rights and moral rights. In the UK such rights require

[65] A. Guadamuz, 'NFTs could have a generative art copyright problem' (*Technollama.co.uk,* 19 February 2022) https://www.technollama.co.uk/nfts-could-have-a-generative-art-copyright-problem.
[66] *Yuga Labs Inc v. Ripps*, 2:22-cv-04355, (C.D.Cal.).
[67] E. Ellbogen & Others, 'Art, Technology & the Law' (*Fasken,* 1 March 2923) https://www.lexology.com/library/detail.aspx?g=e7aaf768-83ef-4269-a57e-daa01997f3c3.
[68] J. Maisel, (n 58).
[69] M. Wilson, *Art law and the business of art* (Elgar practical guides 2019) 1.
[70] S. Stokes (n 25) 3.

no formality to be enforceable,[71] and are distinct from ownership rights i.e. personal property.[72] Therefore, even after the sale of a physical painting, a rightsholder retains the right to prevent reproduction of the work by the new owner, and to enforce their moral rights.

Copyright expires 70 years after the death of the author,[73] and in the case of literary, dramatic or musical works, will only subsist in the work if it is recorded in writing or otherwise.[74] Unlike in the US where there is a general fixation requirement,[75] there is no equivalent provision for artistic works within the CDPA. However, this is a requirement under case law,[76] and CJEU jurisprudence also requires that "the subject matter protected by copyright must be expressed in a manner which makes it identifiable with sufficient precision and objectivity, even thought that expression is not necessarily in permanent form."[77] Both tangible and digital art are capable of being sufficiently fixed and identifiable, and this research will assume that in both cases the artwork is original, protected by the law of copyright and related rights and that in each case the author owns all rights. i.e. he/she has not created the artistic work in the course of employment,[78] or otherwise assigned, waived or licensed rights to the work.

3.2.1 Economic Rights

Economic arguments are prevalent in Anglo-American copyright law where "the purpose of copyright is basically to ensure a continuing profit to the originator or creator of a copyrighted work",[79] with the grant of exclusive rights to the author an incentive for the author to create.[80] It can be debated whether in the fine arts the economic basis of copyright has much relevance, as it is suggested that copyright has no effect on true artistic creativity,[81] so an artist's only motivation is creativity. There are also those that actively challenge the application of copyright law and the need for a strong "public domain."[82] These arguments will be returned to in Part V, but this research argues that, in relation to CryptoArt, not only are economic rights

[71] The Berne Convention Art 5(2).
[72] S. Stokes (n 25) 5.
[73] CDPA s 12(2).
[74] CDPA s 3(2).
[75] 17 USC §101.
[76] *Isletarr Hodings Ltd v Aldi Stores Ltd* EWHC [2019] 1473 (Ch); *Merchandising Corporation of America Inc v Harpbond Ltd* [1983] FSR 32; *Abraham Moon and Sons v Thornber* [2012] EWPCC 37.
[77] Case C-310/17, *Levolo Hengelo BV v Smilde Foods BV* ECLI:EU:C:2018:899.
[78] CDPA s 11(1).
[79] D. Thomas, *Copyright and the Creative Artist* (Institute of Economic Affairs, London, 1968) 27.
[80] S. Stokes (n 25) 11.
[81] D. Thomas (n 79) 27.
[82] S. Stokes (n 25) 16.

necessary to maintain the copyright balance, but that there needs to exist a level playing field between in real life (IRL) and digital artists in their ability to be rewarded and make a living from their endeavours.

Copyright is a territorial right, there is no universal law of copyright,[83] although various legislative attempts have been made at international and European levels to harmonise and strengthen copyright.[84] Under English law a rightsholder is granted a bundle of exclusive economic rights, which they can either restrict others from exercising, or authorise them to do so, in relation to the work as a whole or any substantial part of it. In particular, and of relevance here, a rightsholder has the right to copy the work (reproduction),[85] the right to issue copies to the public (distribution),[86] and the right to communicate the work to the public, which includes the making available to the public of the work by electronic means , so putting the work on the internet (communication).[87] Briefly outlined below, each of these rights will be analysed in more depth to in Part IV of this research.

Copyright is infringed by any person who, without licence from a rightsholder, does or authorises another to do any of the acts restricted by copyright.[88] There do exist a number of "fair dealing" exceptions to copyright infringement, permitting certain acts in relation to protected works.[89]

Reproduction

The copying of a protected work means reproducing the work in any material form, which includes storing the work in any medium by electronic means,[90] and the making of transient or incidental copies.[91] An exception exists for the making of a temporary copy of an artistic work which is an integral and essential part of a technological process, and the sole purpose of which is to enable either the transmission of the work in a network between third parties by and intermediary; or the lawful use of the work; and which has to have no independent economic

[83] S. Stokes (n 25) 3.
[84] The Berne Convention, TRIPS, WCT & WPPT, InfoSoc.
[85] CDPA s 17.
[86] CDPA s 18.
[87] CDPA s 16.
[88] CDPA s 16(2).
[89] CDPA Chapter III.
[90] CDPA s 17(2).
[91] CDPA s 17(6).

significance.[92] In practice this means that browsing is unlikely to amount to copyright infringement, unlike downloading, printing or forwarding protected material for a commercial advantage which may be an infringement.[93]

Distribution

Copies of an artistic work may only be issued to the public by a rightsholder.[94] It is important to note here, as will be further discussed in Parts IV and V, this right is exhausted once the copies have been put on the market with the consent of the rightsholder, i.e. any subsequent distribution or resale is not an infringement.[95] However, as confirmed by the CJEU in *Tom Kabinet,*[96] (outside the specific subject matter of software), the distribution right (so subject to exhaustion) *only* applies to tangible objects, and does not apply to the online dissemination of protected digital content, which is protected by the communication right so not subject to exhaustion.

Communication

The communication to the public of an artistic work is an act restricted by copyright.[97] This restriction includes the communication to the public by the making available to the public of the work by electronic transmission,[98] so for example uploading an artistic work to a website available for access via the internet. Distinct from the distribution right, communication to the public is not subject to exhaustion.

3.2.2 Moral Rights

Moral rights include the right of attribution i.e. to be identified as an author, the right to object to derogatory treatment of a work and the right to object to false attribution.[99] Moral rights are inalienable, i.e. an author retains moral rights irrespective of who owns the actual copyright, which can be freely transferred in whole or in part by way of assignment provided the assignment is in writing and signed by the owner.[100] However, an author must (in the case of

[92] CDPA s 28A.
[93] Case C-360/13 *PRCA Ltd v NLA Ltd* EU:C:2014:1195.
[94] CDPA s 18.
[95] CDPA s 18.
[96] Case C-263/18, *Nederlands Uitgeversverbond, Groep Algemene Uitgervers v Tom Kabinet* ECLI:EU:C:2019:1111.
[97] CDPA s 20.
[98] CDPA s 20(2)(b).
[99] CDPA Chapter IV.
[100] CDPA s 90(3)

the right of attribution) assert their moral rights in order to be able to rely on such a right,[101] and is able to waive all rights by instrument in writing.[102]

N.B. the CDPA disapplies the right of attribution and the right to object to derogatory treatment to computer-generated works,[103] although curiously not false attribution so theoretically within the UK this could apply to computer-generated works.

This research focuses on the economic rights component of copyright. However, moral rights are relevant when characterising the Artist's Resale Right (ARR) below, as it has elements of both an economic right but also a moral rights, in that it is inalienable.[104] In addition, moral rights may be of increasing importance to a digital artist when considering how best to protect their work when used to create unauthorised NFTs. As discussed in Part IV, an author may rely on moral rights either in addition, or as an alternative, to economic rights when considering issues of infringement.

3.3 Artist's Resale Right

Also called "Droit de Suite," ARR was incorporated into law in the UK in 2006 with the Artist's Resale Right Regulations.[105] In addition to economic and moral rights, an author has the right to receive a percentage of the sale price every time a protected work is resold through an auction house or art market professional.[106] Even though an economic right, ARR is inalienable so an author may have assigned copyright in a work but is still entitled to a resale right.[107] Stokes argues that ARR is best categorised as a *sui generis* right rooted in copyright law, with aspects of both economic rights and moral rights (as it is a personality right, given its inalienability), but divorced from ownership.[108]

It can be argued that the ARR puts artists on a par with writers and composers, who may continue to earn royalties on the use their works throughout their term of copyright; the main source of income for an artist absent ARR is the first sale, unlike other copyright works (e.g.

[101] CDPA s 78.
[102] CDPA s 87.
[103] CDPA s 79(2)(c) and s 81(2).
[104] S. Stokes (n 25) 87.
[105] Artist's Resale Right Regulations 2006 (SI 2006/346) (ARR).
[106] ibid s 3.
[107] ibid s 7.
[108] S. Stokes (n 25) 87.

music or books) whether the reproduction right is of greater importance.[109] The rationale behind the resale right is that an artist may have sold art works cheaply when young and unknown, but those art works then subsequently increase in value. However, even though the right is seen as an acknowledgment by society of the merits of and incentive for artistic creativity, it is not without its critics who argue that it makes little economic sense in practice.[110] It is difficult to collect as it requires art market professionals in the resale, the elapse of three years since the original acquisition of the artwork and a minimum threshold for the purchase price of the artwork.[111] Its exercise also potentially involves a consideration of contract and sale of goods law to determine if a resale has taken place and where, which also means that in practice the art market relocates to locations where there is no equivalent right, i.e. the US.[112]

However, similar to the distribution right, ARR only applies to the transfer of art as a physical object, in that the subject matter of the resale right is the physical work, namely the medium in which the protected work is incorporated.[113] So, an artist who works solely in electronic media obtains no statutory ARR, as they will not have created a physical embodiment of the original work that can be resold. The justification for this is that a digital artist, is supposedly able to fully exploit their digital work by licensing its exploitation, much the same way as authors and composers do for their literary and musical works.[114]

N.B. There was concern that, post Brexit, the Retained EU Law (Revocation and Reform) Act 2023 (REUL) posed a threat to the ARR Regulation in the UK. However, the British government, in a subsequent published list of IP laws to be retained, confirmed the retention of the ARR Regulations 2006 and its amendment of 2011.[115]

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[109] ibid 88.
[110] ibid 88.
[111] P. Mezei & Others, 'The Rise of NFTs and the Role of Copyright Law – Part II' (*Kluwer,* 22 April 2021) http://copyrightblog.kluweriplaw.com/2021/04/22/the-rise-of-non-fungible-tokens-nfts-and-the-role-of-copyright-law-part-ii/.
[112] S. Stokes (n 25) 89.
[113] Directive 2001/84/EC of the EP on the resale right for the benefit of the author of an original work of art (ARR Directive) [2001] OJ L 272, Recital 2.
[114] S. Stokes (n 25) 87.
[115] IPO, *Retained EU Law for IP* (*Gov.uk*, 1 January 2024) https://www.gov.uk/government/publications/intellectual-property-and-retained-european-union-law-the-facts/retained-eu-law-for-intellectual-property

3.4 The Doctrine of Exhaustion

This leads us to the doctrine of exhaustion, a central problem with NFTs. The exhaustion principle creates a basic exception to a rightsholder's distribution right *only*.[116] Once a tangible copy of a work, so for example a painting, is lawfully distributed i.e. sold, then the rightsholder's interest in the material object in which that copyright work is embodied is exhausted. This means that the new owner of the material object can dispose of it as they see fit i.e., they can resell, rent, give away or destroy it, so for example once a copyright protected work has been publicly put on the market within the European Economic Area ("EEA") it can then be freely sold within the EEA.[117] However, exhaustion only applies to the *material* element of the work and does not apply to the underlying copyright. Therefore, a rightsholder still retains the right to prevent the reproduction of the work by the owner of the material object, and to enforce their moral rights, as the exhaustion principle applies only to the distribution right.

But the problem with NFTs is that the exhaustion principle has consistently been interpreted as limited to works fixed on a tangible medium, and does not apply to intangible i.e. digital works traded online.[118] Online, the intangibility of a copy of a work, e.g. a digital artwork, is (and unless accompanied by a valid copyright assignment) commercialised via a written licence that does not formally transfer its ownership. This means that in practice a "purchaser" of a digital work is only granted a licence to that work. In addition, as the doctrine of exhaustion does not apply they cannot therefore dispose of i.e. sell the digital artwork, preventing the development of online secondary markets.

The exhaustion principle has never really faced real challenges in the material world as the impact on a rightsholder's exploitation of protected works is limited due to wear and tear of a material object, e.g. a book, meaning that the works distributed deteriorate over time.[119] However, in the digital environment the quality of a work does not deteriorate over time, its enjoyment is non-rival, and a digital work can be reproduced without any flaws and disseminated worldwide without much difficulty. Thus, it is argued that applying exhaustion

[116] Directive 2001/29 on the harmonisation of certain aspects of copyright and related rights in the information society (Infosoc Directive) [2001] OJ L167/10, Recital 29.
[117] CDPA s 18(3).
[118] C. Sganga, 'A Plea for Digital Exhaustion in EU Copyright Law' 9 (2018) JIPITEC 211, para 2.
[119] ibid, para 4.

to digital copies would affect the market for the original to a greater degree to that of physical copies through an increase to the risk of piracy, and a potential impact on sales through the development of secondary markets.[120]

A number of landmark cases have illustrated how users of certain digital "goods" have attempted to overcome the principle of exhaustion and replicate rights from the real tangible world.[121] In the EU *UsedSoft*[122] centred around the debate regarding the legal capacity for software purchasers to resell their "used" software licences. In *Capitol Records vs Redigi*[123] the US Court of Appeal for the Second Circuit was asked the same question in relation to users who wanted to sell legally acquired digital music files, and buy "used" digital music. And, most recently in *Tom Kabinet,*[124] a Dutch company tried to persuade the CJEU that e-books could be legally sold second hand.

The outcome of these cases is well known: software, digital films, digital music, and digital books cannot be resold via a second hand market, for they are not owned by their purchasers in the first place, but licensed.[125] However, the cases do illustrate the continuous tension that exists between the expectations of users of digital items and the companies that are licensing them.[126] *UsedSoft* was the only case that did not entirely rule out the possibility of transferring second-hand software licences, as it would be "unfair" not to allow the existence of a second hand market and an undue restriction of consumers rights.[127]

Supposedly, much of the effort to displace ownership online has been undertaken in the name of strengthening the rights of creators.[128] However, this position favours the larger rightsholders and their retail partners at the expense of individual creators.[129] It is of no benefit to digital artists, who wish to be able to distribute as CryptoArt their digital art works online, and to be able to benefit from income from a first sale and royalty rights associated with a

[120] ibid, para 5.
[121] S. Goossens, 'Digital ownership, the birth of a new concept' (*Reedsmith.com,* 12 November 2021) https://www.reedsmith.com/en/perspectives/2021/11/digital-ownership-the-birth-of-a-new-concept.
[122] Case C-128/11 *UsedSoft GmbH v Oracle International Corp.* ECLI:EU:C:2012:407.
[123] *Capitol Records, LLC v. ReDigi Inc*. 934 F. Supp. 2d 640 (S.D.N.Y. 2013) .
[124] *Tom Kabinet* (n 96).
[125] S. Goossens (n 121).
[126] ibid.
[127] ibid.
[128] A. Perzanowski & J. Schultz, *The end of Ownership* (MIT Press, 2016) 11.
[129] ibid 15.

thriving secondary market. NFTs provide artists with the ability to do this, and the rise in popularity and demand for NFTs demonstrates the need for a solution capable of replicating online rights enjoyed IRL.[130] However, the rules around digital assets such as NFTs remain undefined, and the question is whether the exhaustion doctrine should – and could – in relation to NFTs be retooled in order to better reflect the realities of the digital age? Exhaustion and the personal property rights it recognises are an inherent part of the copyright balance and the basic principle of exhaustion, i.e., the notion that "purchasers" have rights that are not contingent on a rightsholder's permission, can and should survive the transition to a digital economy.[131]

4. The Current Position of NFTs and Copyright Law

As identified above there exists a difference in the copyright of IRL tangible fine art where an artist has the right to distribute a physical copy (subject to exhaustion), so benefiting from a first sale and ARR, compared to copyright in digital art which, if entirely digital, (and unless accompanied by a valid transfer), can only be licensed online i.e. communicated to the public, and with no statutory entitlement to ARR. (N.B The legal validity of any transfer would have to be assessed against the formal and substantive requirements for a transfer of copyright under the applicable national law,[132] for example in the UK any assignment is not effective unless it is in writing and signed by or on behalf of the copyright owner.[133])

Digital artists have attempted to bridge this gap by incorporating physicality into their work. Through the use of code, NFTs take this a step further, creating digital scarcity for digital art, the provision of royalty rights, and a way for digital artists to retain control, verify ownership and monetise digital art works. However, what exactly are NFTs and where do they fit within the law?

[130] S. Goossens (n 121).
[131] A. Perzanowski & J. Schultz (n 128) 33.
[132] B. Bodo & Others (n 1) 276.
[133] CDPA Art 90(3).

4.1 Definition of an NFT?

Problematically, there exists no consensus for a definition of an NFT, with the literature providing numerous different descriptions.[134] The whole area lacks a certain specificity with reference to terms such as: digital assets, digital tokens, virtual tokens, CryptoTokens, cryptographic tokens, CryptoAssets, CryptoArt, Collectibles and NFTs. This research does include a glossary, but the definitions included are those that, in the opinion of the author, best explain the terms, rather than providing any particular legislative authority.

WIPO describes an NFT as a type of cryptographic token that represents an asset that can be commercialised in a digital way,[135] whereas the EU Blockchain Observatory and Forum explains how NFTs function as verifiable proofs of authenticity and ownership within a blockchain network, bearing several characteristics such as scarcity, uniqueness and non-fungibility.[136]

Edward Lee describes NFTs as virtual tokens (bits of data), created by smart contracts, that keep track of all transactions related to each token and stored on the blockchain, which operates as an authentic public ledger.[137] As well as the smart contract that identifies a token as unique, NFTs include a link to the copyright protected work and can be used to identify virtually anything.[138] Each NFT has a unique identifier, making it non-fungible and the sale of an NFT involves the purchase of the digital token, plus a content licence that determines the use of the copyright protected work that the buyer can make.[139]

Noh & Others go into more detail, describing an NFT as a unique set of data traded on the blockchain which represents ownership of and rights in, or to, another asset.[140] They explain how a work is presented as a digital image or file created by an artist, but the actual NFT contains the underlying metadata to the transaction, including an alphanumeric chain that

[134] USPTO & USCO, *NFTs and IP, A Report to Congress* (*USPTO.gov*, March 2024) https://www.uspto.gov/sites/default/files/documents/Joint-USPTO-USCO-Report-on-NFTs-and-Intellectual-Property.pdf 2.
[135] WIPO *Blockchain White Paper for IP Ecosystems* (*WIPO.int,* 2021) https://www.wipo.int/meetings/en/details.jsp?meeting_id=66030.
[136] EU Blockchain Observatory and Forum, 'NFT - Legal Token Classification' (*EUBlockchainforum.eu,* 2021) https://blockchain-observatory.ec.europa.eu/publications/nft-legal-token-classification_en.
[137] E. Lee, 'NFTs as Decentralised IP' (1 February 2022) https://ssrn.com/abstract=4023736 13.
[138] ibid 3.
[139] ibid 3.
[140] M. Noh & Others (n 1) 3.

specifically identifies the token on the blockchain, as well as a hyperlink to the underlying file and a smart contract. [141]

Bodo meanwhile highlights how the basic characteristic of an NFT is a cryptographic token of a non-fungible type.[142] He adds that based on the ERC-721 standard developed for the Ethereum blockchain for generic non-fungible tokens, NFTs are constituted by code (the smart contract) that is time stamped on a blockchain along with additional information (the metadata) which links to the digital asset and which describes relevant additional details which generally include the title, author and a description and may (but generally does not) also contain copyright related information.[143]

The USPTO identified several features common to NFTs, and how the term refers to: (i) a unique cryptographic token, (ii) the ownership of which is recorded to a blockchain (iii) that provides the owner rights in or access to one or more assets or entitlements.[144]

The UK Law Commission states how NFTs are in general constituted as CryptoTokens,[145] which they rather unhelpfully define as, "a notional quantity unit manifested by the combination of the active operation of software by a network of participants and network-instantiated data."[146]

So, to generalise, an NFT features unique characteristics and is not interchangeable. It is a uniquely identified digital asset, e.g. digital artwork, which is minted and stored cryptographically on a blockchain as a non-fungible token. So, an NFT is a unique (one of a kind) cryptographic digital token which is registered on a blockchain (e.g. Ethereum). An NFT shows who owns that particular NFT at any time together with all previous transactions and owners, although owners are identified pseudonymously by unique identifiers rather than actual names. The token either includes or links to the digital asset, and additional information (metadata) describes additional details and, if relevant, points to where the digital art is actually

[141] ibid 3.
[142] B. Bodo & Others (n 1) 269.
[143] ibid 269.
[144] USPTO & USCO (n 134) 2.
[145] Law Commission, *Digital assets: Consultation paper* 256 (28 July 2022) https://lawcom.gov.uk/project/digital-assets/ para 15.4.
[146] Law Commission, *Digital assets: Final report* HC 1486 Law Com No 412 (27 June 2023) https://lawcom.gov.uk/project/digital-assets/ ix.

stored. Metadata can include the title, author, and description of the work and may include copyright-related information and a licence, and even an assignment of copyright. As an NFT is created by code (smart contract) it can also contain instructions in that code, for example for the automatic payment of a royalty on subsequent sales.

There is confusion in the literature as to how an NFT is minted, i.e. created (smart contract / ERC-721 standard / code), how it is identified (alphanumeric chain / smart contract / unique identifier) and where and what information is associated and stored within an NFT (metadata / copyright related information / copyright licence / link to digital asset).

If a digital artist decides to mint an NFT then this typically means uploading a digital file to an NFT marketplace such as *OpenSea* or *SuperRare*. Then, using a smart contract i.e. code, that digital file is "minted" and recorded on the blockchain as an NFT. This means that that the NFT is timestamped and recorded in a cryptographically secure and (to an extent) immutable manner along with any additional information (metadata).

4.2 Copyright in the Code?

This Chapter discusses how the digital file associated with an NFT is protected by copyright, but what is the status of code associated with an NFT? In a recent report to Congress by the USCO, commenters were split on whether tokens themselves or smart contracts are protectable by copyright, with many suggesting that they should be treated as general software code for the purpose of copyright, while others questioned whether the associated metadata and resource identifiers of smart contracts are the type of creative expression that copyright protects.[147]

By way of clarification, even though the underlying digital artwork is capable of being a protected work, an NFT itself will likely not be protected by copyright. NFTs typically comprise a ledger or record of ownership with a link to an underlying asset. It is unlikely that the data suffices to constitute an original work to qualify for copyright protection.

However, what about Ordinal NFTs, i.e. NFTs where the digital file is embedded in the CryptoToken, rather than linked to it? May these Ordinal NFTs, as a whole, qualify for

[147] USPTO & USCO (n 134) 17.

protection as a work as an author's own intellectual creation,[148] given that the work is incorporated into the NFT? Typically NFTs link to the digital work, but as discussed in Chapter 2 §5, this may not always remain the case, an issue that is returned to and discussed further in Part IV.

However, assuming that a digital artwork used to create an NFT meets the full requirement for copyright protection, what rights does a buyer actually acquire when purchasing CryptoArt, or conversely what rights does an artist grant with the minting and sale of an NFT; and, is the minting of an unauthorised NFT actually copyright infringement?[149]

4.3 What Rights Does a Buyer of an NFT Receive?

One of the most common concerns raised about NFTs is the prevalence of consumer confusion about IPR implicated in their creation or transfer.[150]

NFT marketplaces appear to assume that the smart contracts used to transfer NFTs from one account to another are legally binding contracts, at least for the purpose of transferring ownership of the NFT.[151] Absent unauthorised activity this is probably the correct outcome, however it does assume that the law recognises smart contracts as legally binding contracts.[152] Equally, it is also "realistically arguable" that NFTs are to be treated as property in English law,[153] although, as will be discussed below, the actual characteristics of the property rights are less clear, with the main problem when trying to accommodate CryptoAssets into property law being their perceived lack of tangibility.[154]

However, what is the position of rights to the digital resource, i.e. the digital art associated with the NFT? This position is less clear. We have seen that it is not possible to distribute copies

[148] J. Goldman, 'A Primer on NFTs and IP' (*IP & Media Law Updates*, 11 March 2021) https://ipandmedialaw.fkks.com/post/102gt4b/a-primer-on-nfts-and-intellectual-property.
[149] A. Guadamuz (n 65).
[150] USPTO & USCO (n 134) iv.
[151] A. Steiner, 'The Paper It's Printed On: NFTs, Ownership and Conceptual Art' (30 December 2021) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3997352 7.
[152] UKJT) Legal statement on Cryptoassets and Smart Contracts (November 2019) https://technation.io/wp-content/uploads/2019/11/6.6056_JO_Cryptocurrencies_Statement_FINAL_WEB_111119-1.pdf.
[153] *Lavinia Deborah Osbourne* v (1) *Persons Unknown* (2) *Ozone Networks Inc trading as OpenSea* [2022] EWHC 1021 (Comm).
[154] P. Caglayan Aksoy, 'The applicability of property law rules for CryptoAssets' (2023) 15(1) LIT 185 https://doi.org/10.1080/17579961.2023.2184140; OECD *Regulatory approaches to Tokenisation of Assets*, OECD Blockchain Policy Series 2021 https://www.oecd.org/en/publications/regulatory-approaches-to-the-tokenisation-of-assets_aea35466-en.html 193.

of digital works, which as intangible works are communicated to the public. This means that copyright in a digital artwork, whether linked to or embedded in an NFT is (unless validly assigned) only licenced to the "purchaser" of the NFT, and such a licence is not subject to exhaustion, so cannot be "resold". But, how is any licence granted and what are its terms? As analysed in Part III of this research, NFT platforms attempt to cover this via their terms of service (ToS), with varying degrees of consistency and success. In terms of the validity of the ToS, a court may look to a platform's ToS, but may decline to enforce the terms if they violate established law. For example you cannot successfully contract around existing fundamental concepts of property law by asserting that an NFT somehow embodies property rights in a digital file.[155]

If there are no terms, or if the terms are unenforceable, would the law find an implied licence to use the associated digital resource for personal non-commercial use?[156] No UK/EU or US court has yet ruled that buying an NFT provides any such a licence, so absent a valid licence or assignment a purchaser technically derives no rights at all in the digital work over and above anyone else, and only receives at best, and as argued by Mezei, a "quaisi-ownership" interest in a set of information or metadata linked to copyright-protected content.[157] In any event, the original owner (assuming that they do actually own the copyright to the original work) retains the copyright in the original work along with all associated rights.

So, currently and as the law stands, when transferring an NFT an artist transfers ownership of the digital token *only* and the position of the copyrighted material associated with that token needs to be considered separately, i.e. the ownership of the token does not necessarily translate into ownership of the files associated with the tokens.[158]

In addition to the technical complexities of NFTs, this makes for a remarkably complex landscape, for both users and NFT platforms. NFT platforms all have varying ToS which a digital creator and collector are required to navigate, and there remains the question of how

[155] J. Rizzo, 'The Future of NFTs Lies With the Courts' (*Wired.com*, 3 April 2022) https://www.wired.com/story/nfts-cryptocurrency-law-copyright/#main-content.
[156] A. Steiner (n 151) 7.
[157] P. Mezei & Others (n 111).
[158] L. McGowen, '2022 is the Year of Sweeping Changes for Cryptocurrency and Other Digital Asset Transfers' (*JDSUPRA.com.,* 14 January 2022) https://www.jdsupra.com/legalnews/2022-is-the-year-of-sweeping-changes-9286474/ ; J. Rizzo (n 155); E. Caires & Others, 'Transferring property rights in digital property' (*DLA Piper Insights,* 4 October 2021) https://www.dlapiper.com/en/us/insights/publications/2021/10/transferring-property-rights-in-digital-property/.

enforceable some of these terms may be, which will remain unclear until we have case law.[159] Also problematic, and ignoring the legally validity of any transfer and secondary markets, is how any subsequent collector is made aware of what licence was originally applied to, and intended to travel with the NFT.[160] As pointed out by Bodo,

> *The dissonance between the applicable licence agreement and its communication via the chosen marketplace is the main driver of legal uncertainty in NFT transactions. Putting aside the legally dubious basis for many provisions in NFT licensing agreements, these licences are often hard to locate, do not clearly refer to a specific NFT, and are rarely interoperable across different platform marketplaces. The rapid growth of the NFT community and trading volume can only lead to magnifying any copyright enforcement legal uncertainties between users, rightsholders, NFT traders and marketplace platforms.*[161]

When minting an NFT, it is possible to program a smart contract assigned to that NFT to automatically enforce the payment of a certain percentage of any subsequent resale to the artist.[162] Whilst an artist has a statutory right to resale rights in the UK such rights are not recognised in the US, and in the UK they are not without limitations and only apply to tangible art, putting at risk the legal validity of any royalties associated with NFTs.

The conclusion is that, in terms of rights, NFTs do not comfortably "fit" within current copyright law. Essentially, through contracts and practices in the market place i.e. private ordering, parties have devised arrangements related to copyright protected works which are not dictated or covered by copyright.[163] Such arrangements create a new right of resale and considerable confusion in ownership rights, as the purchaser is often under the perception that they "own" a piece of digital artwork. However, in order for NFTs to "fit" within copyright law any transaction involving a digital artwork, unless validly assigned, can only be by way of a licence which, because of the doctrine of exhaustion, cannot be resold and therefore involve no ongoing royalty payments.[164]

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[159] M. Noh & Others (n 1) 22.
[160] ibid 22.
[161] B. Bodo & Others (n 1) 274.
[162] M. Prohaska-Marchried, 'Review of NFT Smart Contracts' (*The Licensing Journal*, February 2022) 14.
[163] E. Lee (n 137) 5.
[164] E. Garnett & Others, 'NFTs: Gateway to Financial Independence or Litigation Risk?' (*Bhfs.com,* 1 March 2022) https://www.lexology.com/library/detail.aspx?g=b57ebb63-65ec-4333-bfaa-556b69103264.

4.4 What about Copyright Infringement?

This section turns to the question of whether the minting of an unauthorised NFT is copyright infringement.

Even though NFTs do not technically fit within copyright law, this does not mean that they are or have been free from legal action. In the UK we are beginning to see cases involving NFTs but not specifically related to copyright.[165] A claim was filed in the High Court against *NiftyGateway*, concerning the auction terms of a "ranked auction" on *NiftyGateway* for a piece of digital art by Beeple.[166] However, the High Court has since held that it has no jurisdiction over the key parts of the claim, and that the residual parts should be stayed in favour of the New York arbitration commenced by *NiftyGateway*.[167]

However, of interest is a comment from the judgement by the Judge, Ms Clare Ambrose, where she highlights the lack of clarity as to what NFTs actually are:

> *There was an interesting issue on the evidence as to the nature of NFTs as assets, and whether they are artwork, with the Claimant's position being that he was trading in digital art whereas the Defendant maintained that an NFT is merely a unique string of code stored on a blockchain ledger that makes a digital artwork accessible, and marks authenticity. Fortunately, such issues need not be decided by me. It was common ground that trading in NFTs involves digital information, not merely a physical object and that NFTs are a part of blockchain technology.*[168]

Again, although not a copyright case, HMRC was the first UK Law enforcement agency to seize NFTs as part for a probe into a suspected VAT fraud.[169]

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[165] *Osbourne* (n 153); *D'Aloia* v (1) *Persons Unknown* (2) *Binance Holdings Limited and others* [2022] EWHC 1723 (Ch).
[166] O. Tapper, 'Art Collector's court case signals potential legal and contractual issues with NFTs' (*Out-Law Analysis,* 26 October 2021) https://www.pinsentmasons.com/out-law/analysis/court-case-potential-legal-contractual-issues-nfts; R. Pryor, 'Art collector sues NFT platform Nifty Gateway' (*The Art Newspaper,* 1 October 2021) https://www.theartnewspaper.com/2021/10/01/art-collector-sues-nft-platform-over-beeple-auction.
[167] G. Di Palma, 'Nifty Gateway LLC v. Amir Soleymani' (*Global Legal Chronicle,* 8 April 2022) https://globallegalchronicle.com/uk/2022/04/08/nifty-gateway-llc-v-amir-soleymani/.
[168] *Soleymani v. Nifty Gateway LLC* [2022] EWHC 773 para 34.
[169] BBC News, 'HMRC seizes NFT for first time in £1.4m fraud case' (*BBC.co.uk*, 14 February 2022) https://www.bbc.co.uk/news/business-60369879; A. Sackey, 'HMRC's NFT seizure "unlikely to be the last"' (*Out-Law News*, 15 February 2022) https://www.pinsentmasons.com/out-law/news/hmrcs-nft-seizure-unlikely-to-be-the-last.

There has been more activity in the US regarding legal actions involving NFTs, with a number of cases centred around whether the person minting an NFT had the rights to do so in the first place. *Roc-A-Fella Records* successfully claimed that *Damon Dash* was unable to sell what he did not own when he advertised for sale an NFT for Jay Z's Reasonable Doubt.[170] The Court granted a temporary restraining order in this case, which lacks the benefit of a full legal briefing, with the court simply holding that the plaintiff would probably win on the merits.[171] Similarly *Playboy Enterprises* obtained a temporary restraining order in relation to a company that launched a line of NFTs using nearly identical imagery to Playboy's computer-generated rabbit avatars "Rabbitars".[172] This case was also a trademark case as it centred around the use by defendants of Playboy's name and other registered trademarks.[173] However, both of these cases show that courts are prepared to apply traditional IP enforcement rules to this new technology.[174]

Miramax and *Quentin Tarantino* settled a dispute following the minting by *Tarantino* of NFTs in relation to his own screen writing for Pulp Fiction.[175] And, further demonstrating that brands are prepared to protect their rights in the Metaverse, *Hermes*, in another trademark case, successfully filed a lawsuit against a digital artist selling unauthorised Birkin Bag NFTs, "MetaBirkins".[176] In Australia, a Cryptocurrency-backed consortium Spice DAO spent $3.5 million buying a rare art book, "Jodorowsky's Dune" with the intent to make the book public, produce an animated limited series inspired by the book and to issue a collection of NFTs.[177] The group were under the misconception that by owning the "physical" book they also owned the underlying rights in the book. As Spice DAO discovered to their cost, this is not the case as such exclusive rights remain with the rightsholder, and Spice DAO would have needed to obtain a licence in order to produce any kind of derivative work free from risk of copyright infringement.[178]

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[170] *Roc-A-Fella Records, Inc,. v. Damon Dash*.. Case No. 1:21-cv-05411 (SDNY 2021)
[171] A. Nyhan, 'NFTs Make first Appearances in US Courts' (*Perkins Thompson.com*, 30 December 2021) https://www.perkinsthompson.com/non-fungible-tokens-make-first-appearance-in-u-s-courts/?fbclid=IwAR1j4x5FmbgvANzpT0vBxmobOwYEyPBY7-HZRe_WaVdR4s6atzJ2Ip6Miqc.
[172] *Playboy Enters. Int'l v. www.playboyrabbitars.app*, 21 Civ. 08932 (VM) (SDNY 2021)
[173] A. Nyhan (n 171).
[174] ibid.
[175] *Miramax Vs. Quentin Tarantino*. Case No 2:21-cv-08979 (CDC 2021)
[176] T. Dafoe, 'Hermes is Suing a Digital Artist for Selling Unauthorised Birkin Bag NFTs in the Metaverse for as Much as Six Figures' (*Artnet News,* 26 January 2022) https://news.artnet.com/art-world/hermes-metabirkins-2063954; *Hermes International v. Mason Rothschild*, February 2023, 1:22-cv—00384 (SDNY).
[177] C. Foley, 'You spent $3.5m on What?!'(*Minter Ellison,* 11 March 2022) https://www.minterellison.com/articles/spice-dao-dune-nfts-and-copyright.
[178] ibid.

Within the EU, there is limited judicial guidance with only one ruling which refers to NFTs and copyright infringement. In a recent Spanish decision, Barcelona's Ninth Mercantile Court ruled in favour of Mango in a case brought against it by the Spanish copyright society VEGAP.[179] Mango owned five paintings, and created NFTs of the paintings for non-commercial display online. In a judicially creative and flexible decision, the Court found that although Mango had communicated the works to the public, they were entitled, as owners of the paintings, to display the paintings to the public in any environment, whether physical or virtual. Equally, although they had copied the works in creating adaptations, i.e. NFTs, the use was non-commercial and "harmless".

From a digital artist point of view, many report the "theft" of their protected works which have been minted by others.[180] Most platforms appear to "take down" such NFTs at an artist's request and have introduced ToS to deter would be copyright abusers.[181] However, this does create an additional burden for artists managing their works, in that the obligation is for them to monitor for unauthorised NFTs.[182]

However, is the minting of an unauthorised NFT actually copyright infringement? The Hangzhou Internet Court in China held that the sale of an unauthorised NFT does not, as far as Chinese law is concerned, infringe a rightsholders' distribution right in the underlying work, which is limited by the doctrine of exhaustion, but does infringe the right of communication.[183]

In relation to potential infringement within the EU and UK, the literature has identified the issue of a "link" to the underlying digital artwork within an NFT.[184] As will be analysed in

[179] A. Cerri, 'Spanish Court finds that virtual exhibition of NFTs based on paintings is harmless use' (*IPKat,* 20 February 2024) https://ipkitten.blogspot.com/2024/02/spanish-court-finds-that-virtual.html; Juzgado de lo Mercantil no 09 de Barcelona, No de Resolucion: 11/2024.
[180] J. Purtill, 'Artists report discovering their work is being stolen' (*ABC.net.au,* 16 March 2021) https://www.abc.net.au/news/science/2021-03-16/nfts-artists-report-their-work-is-being-stolen-and-sold/13249408 ; P. Yuna, 'NFT art shakes up Korean art market' (*The Korea Herald,* 9 July 2021) Henry Lydiate, 'Get Minted' (*Art Monthly* no 453, February 2022) https://artquest.org.uk/artlaw-article/get-minted/ .
[181] H. Lydiate (ibid).
[182] E. Perot, 'NFTs: copyright foe or friend' (2021) 43(12) EIPR 793-799.
[183] A. Xu & H. Lam, 'Chinese Court rules in first NFT Copyright Infringement Case' (*DLAPiper.com,* 10 May 2022) https://www.dlapiper.com/en/us/insights/publications/2022/05/chinese-court-rules-in-first-nft-copyright-infringement-case/.
[184] B. Bodo & Others (n 1); A. Guadamuz (n1); H. Brorsen. 'Minting NFTs – a Fresh Breath for European Copyright Law?' (*European Blockchain Centre*, 20 April 2022) https://www.ebcc.eu/presentation-by-hans-brorsen-2022/

further detail in Chapter 9, the CJEU in *Svensson* found that a hyperlink is capable of being an act of communication, but how if it links to a work already available on the internet it is not an infringement. The CJEU found that a hyperlink is a "communication" that reaches a "public", but not however a "new public", as the hyperlink does not communicate the work to a public not considered by the rightsholder at the time of the initial communication.[185] In *GS Media*, the CJEU clarified that *Svensson* does not apply to hyperlinks to works posted unlawfully, and in such cases a finding of communication to the public depends on a number of objective and subjective factors.[186] The CJEU has since confirmed in *VG Bild-Kunst*[187] how the posting of hyperlinks (of any type) to protected content without the permission of the rightsholder meets the legal requirement for the concept of communication to the public and triggers the application of the exclusive right.[188] So, for a finding of infringement, the question is whether, within an NFT, there needs to be a link to protected content, which has been created without the permission of the rightsholder?

Any potential infringement also assumes that copyright subsists in the underlying digital art work. As we have seen above, in relation to generative art, this might not always be the case (§ 3.1.1). This means that if there is no copyright protection in the associated digital artwork, there is no copyright infringement, excluding a copyright claim.[189]

This area will be analysed in more depth in Chapter 9 of Part IV. However, this research recommends how a more purpose led technologically neutral interpretation of copyright law might help to clarify what is rapidly becoming an overly technical and complex area of law. The complexity of the case law, together with the question of how an NFT is minted i.e. whether the underlying work is linked to or embedded within an NFT, distract from the issue at hand, i.e. the unauthorised minting of an NFT.

5. Platform Liability

Touching briefly on the liability of the NFT platforms, which will also be further covered in Part IV Chapter 10, NFT platforms are arguably outside of the scope of liability regime of

[185] Case C-466/12, *Svennson v Retriever Sverige AB* ECLI:EU:C:2014:76.
[186] Case C-160/15, *GS Media* EU:C:2016:644.
[187] Case C-392/19, *VG Bild-Kunst v Stiftung Preussischer Kulturbesitz* ECLI:EU:C:2021:181.
[188] B. Bodo & Others (n 1) 278.
[189] *Yuga Labs Inc v. Ripps*, 2:22-cv-04355, (C.D.Cal.).

Article 17 of the DSM Directive.[190] In addition NFT platforms that do not cross the threshold of deliberate intervention for Article 3 InfoSoc Directive,[191] i.e. they are not communicating works to the public and qualify as sufficiently "passive" to justify protection under the hosting safe harbour rules under Article 14 E-commerce Directive[192] (or in the US the DMCA safe harbour rules[193]) provided that on obtaining knowledge or awareness of illegal activity or information they act expeditiously to remove or disable access to the information.[194] However, many are beginning to suggest that the vetting obligations of an NFT platform should be relatively higher as the NFT business by nature requires more "trust", and ultimately, as the NFT platform profits directly (via commission) from NFT minting and sales, it should therefore have a higher duty of care,[195] with others arguing that platforms could and should do more to verify an NFTs legitimacy.[196]

6. The Property Nature of CryptoAssets and NFTs

Finally, returning to property law as introduced in §2.2 of this Chapter, the property nature and characteristics of CryptoAssets and NFTs is a current issue in property law which has implications for the application and interpretation of copyright law.

6.1 Definition of CryptoAsset

There is no uniform understanding or definition of a CryptoAsset.[197] In the EU MiCA defines a CryptoAsset as a digital representation of value or rights which may be transferred and stored electronically, using distributed ledger technology, or similar technology.[198] The UK Law Commission defines a Digital Asset as any asset that is capable of being represented digitally or electronically,[199] whilst its definition of a CryptoAsset, as a type of Digital Asset, refers to a CryptoToken which has been linked to a legal right or interest in another thing.[200]

[190] B. Bodo & Others (n 1) 279; Directive 2019/790 on Copyright and Related Rights in the Digital Single Market [2019] OJ L130/92 (DSM Directive).
[191] Directive 2001/29 on the harmonisation of certain aspects of copyright and related rights in the information society (Infosoc Directive) [2001] OJ L167/10
[192] Directive 2000/31 on certain legal aspects of information society services, in particular electronic commerce, in the Internal market (Ecommerce Directive) [2000] OJ L178/1
[193] 17 USC §512
[194] Ecommerce Directive Article 14(1)
[195] A. Xu & H. Lam (n 182)
[196] L. Beckett (n 21)
[197] P. Caglayan Aksoy (n 154) 185; OECD (n 154) para 5.1.
[198] MiCA Art 3(1).
[199] Law Commission *Digital assets: Final report* (n 146) Glossary.
[200] ibid, Glossary.

So, we can assume that CryptoAssets are a type of Digital Asset, and the term encompasses CryptoCurrencies, CryptoTokens and NFTs. CryptoArt is a term used to describe a particular type of NFT, i.e., an NFT which either links to or is inscribed with a protected digital file of "high end" fine art.

6.2 CryptoAssets as Property?

In addition to the problem of a legal definition, many countries are also struggling with the property character of CryptoAssets.[201]

Courts across the common law world now consistently proceed on the basis that CryptoAssets are capable of being objects of personal property and are therefore susceptible to the various consequences that follow.[202] In the UK, Singapore and New Zealand court decisions have accepted that CryptoAssets can be conceptualised as (objects of) property.[203]

Within the EU MiCA creates a complex regulatory regime specifically for CryptoAssets. However, it focuses mainly on the issuance of CryptoAssets and the provision of CryptoAsset services, with the aim of providing legal clarity to the CryptoAsset industry, and whilst providing a taxonomy of CryptoAssets, it provides no guidelines as to their legal nature.[204]

International law reform initiatives include the UNIDROIT Digital Assets and Private Law Working Group ("UNIDROIT Working Group"), which published a set of international principles, setting out a proprietary framework applicable to digital assets. [205] In effect, the principles apply proprietary concepts to a category of things distinct from things in possession and things in action.[206] This is the approach broadly adopted by the UK and the US and the next section focuses on the current position in the UK and the US, discussing this issue in relation to NFTs and copyright.

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[201] P. Caglayan Aksoy (n 154) 186
[202] Law Commission *Digital assets: Final report* (n 146) para 3.43.
[203] *Osbourne* (n 153); *Janesh S/O Rajkumar v Unknown Person* ('Chefpierre') [2022] SGHC 264; *Ruscoe v Cryptopia Ltd (in Liquidation)* [2020] NZHC 728.
[204] P. Caglayan Aksoy (n 154) 187
[205] Unidroit *Principles on Digital Assets and Private Law* (4 October 2023) https://www.unidroit.org/wp-content/uploads/2024/01/Principles-on-Digital-Assets-and-Private-Law-linked-1.pdf.
[206] ibid.

6.2.1 NFTs as Property in the UK

In the UK in *Osbourne v Persons unknown and Ozone Networks t/a OpenSea*, the High Court granted a proprietary injunction over NFTs representing digital artworks. As well as affirming that NFTs are to be treated as property under English law (like other CryptoAssets),[207] the court held that the *lex situs* of an NFT is the place in which the person or company who owns it is domiciled.[208]

The Law Commission, with its final report on Digital Assets concluded that the law in the UK is "sufficiently resilient and flexible to recognise some digital assets as things to which personal property rights can relate."[209] It confirmed that NFTs, as digital assets, are "things to which personal property rights can relate,"[210] thereby confirming the position in common law.[211]

The UK traditionally recognises two distinct categories of personal property rights: rights relating to things in possession (tangible things) and rights relating to things in action (legal rights or claims enforceable by action).[212] The Law Commission concluded that, although some digital assets are not easy to place within traditional categories, this does not prevent them from being capable of attracting personal property rights, and that this is clearly the position at common law.[213] They therefore concluded that some digital assets are neither things in possession nor things in action, but that nonetheless are still capable of being things to which personal property rights can relate,[214] effectively creating a third category of property.

This position is reflected in the proposed Property (Digital Assets etc) Bill [HL], which states:

> *A thing (including a thing that is digital or electronic in nature) is not prevented from being the object of personal property rights merely because it is neither (a) a thing in possession, nor (b) a thing in action.*

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[207] *Osbourne* (n 153) 13.
[208] ibid 15-16.
[209] Law Commission *Digital assets: Final Report* (n 146) para 1.7
[210] Law Commission Digital assets: Summary of final report (June 2023); Law Commission *Digital assets: Final Report* (n 146) para 2.6.
[211] *LMN v Bitflyer Holdings Inc* [2022] EWHC 2954 (Comm) (November 2022); *Tulip Trading Ltd v Van Der Laan* [2023] EWCA Civ 83, [2023] 4 WLR 16 (February 2023); *Osbourne* (n 152); *Piroozzadeh v Persons Unknown* [2023] EWHC 1024 (Ch) (March 2023)
[212] Law Commission *Digital assets: Final Report* (n 146) para 2.47
[213] ibid, para 2.6.
[214] ibid, para 2.45.

So, whilst on the one hand providing legal certainty by confirming that digital assets are capable of being things to which personal property rights can relate, by creating a third category of things, they have created a grey area regarding whether such a third category of thing, so for example a CryptoArt NFT, is in fact tangible or intangible, leaving further development to the courts.[215] As will be analysed in Chapter 8 of thesis in relation to the interpretation of copyright law, this distinction matters and, without further clarification, adds an additional unwelcome level of complexity to the continuing exploitation and protection of CryptoArt.

6.2.2 US

Although CryptoAssets do not fit neatly into classical categories of property in the US,[216] there is a view that they can be accepted as a new kind of asset, and the dynamic understanding of property allows for this.[217] In 2022 the US adopted changes to the US Uniform Commercial Code (UCC), with a proposed new UCC Article 12 that governs transactions in a subset of digital assets called "controllable electronic records" (CERs), and which includes NFTs.[218] The new article governs the transfer of property rights in certain intangible digital assets that have been or may be created in the future using new technologies. The main purpose of the reform is to recognise that concepts of personal property under the UCC can apply to certain intangible assets that are created using novel technologies.[219]

This is an area that will discussed in further detail in relation to the rights transferred with the sale of an NFT in Chapter 8, but is also mentioned here for context and as a current legal issue concerning NFTs.

7. Conclusion

NFTs create the opportunity for artists to create an entirely new marketplace for purely digital artworks as CryptoArt. CryptoArt NFTs enable digital artists to receive compensation via the first sale of their artwork, verify their artworks, access new markets and retain greater control over their digital works. However, as we have seen from the above discussion NFTs do not fit

[215] ibid 2.52.
[216] J. Moringiello & C. Odinet, 'The Property Law of Tokens' (2022) 74(4) Fla.Law.Rev 607 https://ssrn.com/abstract=3928901.
[217] P. Caglayan Aksoy (n 154) 213.
[218] UCC Committee, *Uniform Commercial Code* Amendments (2022) (1 June 2023) Art 12 https://www.uniformlaws.org/viewdocument/final-act-164?CommunityKey=1457c422-ddb7-40b0-8c76-39a1991651ac&tab=librarydocuments.
[219] P. Caglayan Aksoy (n 154) 214; UCC Committee (n 218) Art 12

neatly within, and are challenging copyright rules. Whilst NFTs are in some ways are trying to bypass legal transactions in favour of a technical solution,[220] they do offer an opportunity to re-examine core doctrines of copyright law, such as ownership, distribution, exhaustion and resale.[221]

The current regulation of choice in the NFT space is not copyright law but code.[222] From this perspective NFTs are the latest iteration of technological attempts to encode some form of copyright to digital objects with a view to digitise scarcity and enable commercial exploitation.[223] NFTs create a separate market place for novel digital (metadata) artefacts and represent a meta-ownership concept, which relies on code to allow for ownership-like digital distribution, exhaustion, remunerated resale, and enforcement within the context of a blockchain based system.[224]

Why does all this matter? It matters because, when problems arise, which they will i.e. when it comes to enforcement, infringement and potential remedies, parties will resort to traditional methods to protect their rights. Issues are also increasingly arising with NFTs being minted without the author's permission,[225] a situation which will at some point demand a legal solution.

The law is also increasingly becoming outdated as, when considering the challenges involved with licensing digital art online, together with the increasing value of "fine" digital artworks, CryptoArt is far more suited to commercialisation via a first sale and to being collected rather than licensed. However, currently an artist who works in purely digital media is expected to be able to exploit their works via licences, and not via the first sale or subsequent royalties from the resale of their works. This thesis concludes that digital artworks, as CryptoArt, are of equivalent artistic merit to physical "fine art", and equally collectible, thereby meriting being sold to collectors as fine art, benefitting from a first sale and a resale right for the artist. Whatever the merits or longevity of NFTs, they have certainly made the point that there is real value in digital art, and a demand from collectors.

[220] A. Guadamuz (n 1) 2.
[221] P. Mezei & Others (n 111).
[222] ibid.
[223] ibid.
[224] ibid.
[225] A. Guadamuz (n 1) 11.

How the law can be interpreted to apply to NFTs will be covered further and in more detail in Part IV, but this thesis recommends a purpose led, technologically neutral and future proof definition of NFTs and interpretation of copyright law. In order to create a level playing field between IRL and digital artists, not only do NFTs need to be recognised as property, but as tangible property. Equally, an NFT should be viewed as a whole, rather than a sum of parts, regardless of how it is minted. So, any digital artwork associated with an NFT, is incorporated within the NFT thereby creating a CryptoArt NFT. Technology is developing at pace, with the rise of Ordinal NFTs, where the digital asset is inscribed on the NFT. NFTs should not be distinguished depending on how they are minted, so whether a digital asset is embedded, inscribed or linked to the NFT when they all achieve the same outcome. Treating an NFT as a whole, rather than a sum of parts, and as tangible means that as with an IRL painting, a digital file is fixed to a material object which can then be lawfully distributed and resold via secondary markets, providing legal certainty for transactions, the application of ARR and increased consumer protection.

This position reflects what is happening in practice, and would future proof any technological developments. The rest of this thesis supports, analyses and justifies this position. Empirical research in Part III demonstrates how this is the position in practice, Part IV analyses how the law can be interpreted to provide legal certainty for NFTs, and finally Part V justifies this position from a theoretical point of view.

Finally, will regulation through code be sufficient for the CryptoArt market to establish credibility and flourish? Currently, it is evident that there is considerable misunderstanding not only about what NFTs are, but also surrounding ownership and copyright issues in relation to NFTs. Will users understand the market without further legal certainty and standardisation? Will they trust the platforms enough for the market to develop to its full potential, or will something more be needed? Or, does the law need to adapt in order to provide additional governance and trust for what is currently a rather grey area when it comes to copyright law?

Part III – How do NFT Platforms approach Copyright?

This Part of the thesis covers the empirical research of the NFT Platforms. Chapter 4 details the methodology and research design, with Chapter 5 providing a summary of the functionality of the six NFT platforms researched. Chapters 6 and 7 analyse the findings, with Chapter 6 analysing the overarching Umbrella Themes, and Chapter 7 the Core Copyright Themes that emerge from the research.

Chapter 4 : Law in context - NFT Platform Case Studies, Methodology and Research Design

1. Introduction

Within copyright law NFTs lack legal certainty. To date NFT platforms, where NFTs are created (minted), bought and sold, have adapted the law as they see fit. Through contracts and practices in the market place i.e. private ordering, they have devised arrangements related to copyright protected works which are not dictated or covered by copyright law.[1]

In order to analyse how NFT platforms approach copyright issues in practice, this thesis undertakes empirical legal research. Within a comparative legal methodology, empirical research provides "law in context".[2] This is particularly helpful where, as is the case here, there exists limited "law in action" i.e., case law and/or the law is unclear. However, law in context studies require a much broader approach than a pure doctrinal comparison, implying the use of (results) from other disciplines, and/or adopting some of the methods used by the social sciences.[3]

The aim of this Chapter is to clarify the philosophical assumption and methodology underlying the empirical research, and detail the method used, i.e., case studies.

[1] E. Lee, 'NFTs as Decentralised IP' (1 February 2022) https://ssrn.com/abstract=4023736 5; P. Mezei & Others, 'The Rise of NFTs and the Role of Copyright Law – Part II' (*Kluwer*, 22 April 2021) https://copyrightblog.kluweriplaw.com/2021/04/22/the-rise-of-non-fungible-tokens-nfts-and-the-role-of-copyright-law-part-ii/?output=pdf.
[2] M. Van Hoecke, 'Methodology of Comparative Legal Research' (2015) LaM 1-35, https://doi.org/10.5553/rem/.000010 16.
[3] ibid 30.

2. Justifying Philosophical Underpinning

Whilst empirical research can assist in providing context and social reality, it does then need to be compared to the doctrinal context. Van Hoecke argues that there currently exists a somewhat schizophrenic situation in which legal doctrine studies law as a normative system, limiting its "empirical data" to legal texts and court decisions, whereas social science research studies legal reality, as it is.[4] He adds how these two strands of discipline are not brought together in any systematic way, and neither are they combined or integrated at the level of legal scholarship.[5]

In this research, by adopting an overall philosophical position of critical realism, we can compare doctrinal research to the empirical research undertaken.[6] Critical realism adopts a realist ontology i.e., both the legal frameworks and the NFT platforms exist independently of the researcher. However, the way that the research is then interpreted and compared adopts a more subjective and theory dependent position to suggest a solution,[7] which resonates with the better solution approach which underlines many comparative law research projects.

So, the real world of NFT platforms can be observed using research tools and methods from the social sciences. Such observations can then be interpreted from a subjective theory dependent perspective, taking into account the theories justifying IP and NFTs as outlined in Part V, knowledge of the normative frameworks of copyright law, and the current issues raised by NFTs within copyright law.

3. Socio-legal or Empirical Legal Methodology?

There are many different definitions of the term "socio-legal", however in common with comparative legal studies, socio-legal scholars argue that law operates in a complex social context and not in a vacuum,[8] with many becoming dissatisfied with the traditional type of

[4] M. Van Hoecke, *Methodologies of Legal Research* (Oxford: Hart Publishing 2011) 2.
[5] ibid 2.
[6] T. Fryer, 'A short guide to ontology and epistemology' (*TFryer.com,* 2020) https://tfryercom.files.wordpress.com/2020/10/cr_shortguide_201029.pdf.
[7] ibid.
[8] M. Salter & J. Mason, *Writing Law Dissertations* (Pearson Education 2007); R. Cotterrell, 'Why Must Legal Ideas Be Interpreted Sociologically?' (1998) 25(2) J.L& Soc 171; D. Harris, 'The Development of Socio-Legal Studies in the UK' (1983) 2 Leg.Stud. 315; D. Feenan, *Exploring the 'Socio' of Socio-Legal Studies* (Palgrave Macmillan 2013).

legal scholarship, i.e. doctrinal or "black letter law".[9] Whilst the core of legal research inherently remains doctrinal, there are wider considerations that need to be taken into account, i.e., "law in context". A socio-legal methodology allows a researcher to chart more complex answers to what can still remain distinctly legal problems.[10] Rather than artificially detaching the legal aspects of problems, what emerges is research with a more holistic understanding of what problems the law can solve, and what social, economic and cultural factors it remains dependent on.[11]

Some use the term broadly to cover the study of law in its social context,[12] whereas others prefer to use it to refer to a more inter-disciplinary study of the law and legal institutions from the perspective of the social sciences.[13] This research is not by nature inter-disciplinary in that it does not use the resources of other social sciences, for example sociology, economics, or political science. However, it does employ the tools and methods of the social sciences in order to empirically study NFT platforms within their context, and therefore conforms with the broader definition of socio-legal research in that it goes beyond the law to research the "law in context". It therefore can be defined as both empirical legal research as well as sitting within the broad umbrella of "socio-legal research", as empirical research involves the systematic collection of information ("data"), and its analysis according to some generally accepted method.[14]

However, whilst methodology underpins and informs research as a set of principles and ideas that inform the design of a research study, methods are the practical procedures used to generate and analyse data.[15] The chosen method to generate data is the case study method, and the data is analysed using Reflexive Thematic Analysis.

4. Justifying Case Study Method

Critical realism is recognised as a viable philosophical paradigm for conducting social science research and offers opportunities to investigate complex phenomena, i.e. NFT platforms, in a

[9] D. Harris (n 8) 315.
[10] D. O'Donovan, 'Socio-Legal Methodology' in L. Cahillane & J. Schweppe, *Legal Research Methods* (Clarus Press 2016) 108.
[11] ibid, 108.
[12] D. Harris (n 8) 315.
[13] ibid, 315.
[14] P. Cane & H.M. Kritzer, *Oxford handbook of Empirical Legal Research* (OUP, 2010) 4.
[15] ibid 932.

holistic manner.[16] Whilst it can accommodate a variety of research methods, the method chosen here is the case study method. Case studies denote a particular ideological approach to research, recognising the desire to investigate a complex and contemporary phenomenon within its real-world context.[17]

Yin, primarily known for his work in this area, defines a case study as an empirical enquiry that:

> *1. Investigates a contemporary phenomenon (the case) in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident; and,*
>
> *2. Copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result benefits from the prior development of theoretical propositions to guide data collection and analysis.*[18]

A case study method is the preferred method for when (1) the main research questions are "how" or "why" questions, (2) the researcher has little or no control over behavioural events; and (3) the focus of a study is a contemporary (as opposed to entirely historical) phenomenon.[19] So, the method is preferred when examining contemporary events and its strength is in its ability to deal with a variety of evidence, for example as here journal articles, online resources e.g. news articles and blogs and the NFT platforms themselves.

Case study research can include both single and multiple case studies and rely on either/or qualitative or quantitative evidence,[20] and the goal of case studies is to expand and generalise theories rather than extrapolate probabilities (statistical generalisations).[21] This research relies on qualitative evidence and includes multiple case studies.

[16] D. Wynn & C. Williams, 'Principles for Conducting Critical Realist Case Study Research in Information Systems' (2012) 36(3) MIS Quarterly 787-810, 787.
[17] A. Argrou, 'Making the Case for Case Studies in Empirical Legal Research' (December 12 2017) Utrecht L.Rev https://utrechtlawreview.org/articles/10.18352/ulr.409.
[18] R.K. Yin, *Case Study Research* (5th edn, Sage 2014) 16.
[19] ibid, 2.
[20] ibid 19.
[21] S.M. Lipset & Others, *Union Democracy.* (New York: Free Press, 1956) 419.

5. Case Study Research Design

A research design is a logical sequence that connects the empirical data to the study's initial research questions and ultimately to its conclusion.

5.1 Case Selection

This research began in the Autumn of 2020 with a broad overview of how blockchain technology was being adopted and used within the CIs. Over one hundred platforms were identified and investigated, from those providing timestamping and rights management services, to music streaming, gaming and film services. However, NFTs were clearly rapidly becoming a "thing", with peak CryptoArt reached in March 2021 with Beeple and his sale for $69.3 of "Everydays: The First 5,000 Days".[22] NFTs, and more specifically CryptoArt, therefore became an ideal focus for this research, which then shifted from investigating the use of blockchain technology by the CIs, to copyright issues specifically surrounding NFTs and CryptoArt. NFT platforms trading in CryptoArt were identified within the broader picture, and a list of thirteen platforms created, which included the majority of well-known and discoverable platforms. These platforms were then categorised according to their functionality, location and date established.

In the Summer of 2022 detailed memos were written for each of these thirteen platforms to further understand, categorise and identify patterns within the platforms. So, for example how they dealt with the issues of verification and curation, liability and infringement together with their use of the technology in relation to their business models, i.e. fees and royalty payments, ease and technicalities of minting, storage and platform structure.

The platforms were then grouped into similar and/or different categories, and a smaller number of platforms selected in order to gather as much contrasting data and rival explanations as possible within the given time frame, with six cases being selected for further research. At the time of selection (Summer 2022) the market was relatively crowded and volatile. The data at the time was also inconsistent and patchy, and it proved challenging to separate CryptoArt as

[22] A. Brown, 'Beeple NFT Sells for $69.3 Million' (*Forbes*, 11 March 2021) https://www.forbes.com/sites/abrambrown/2021/03/11/beeple-art-sells-for-693-million-becoming-most-expensive-nft-ever/.

a subcategory from the overall Collectibles market.[23] For example, *OpenSea* was at the time, and remains, the market leader. However, it is not a CryptoArt specialist, and it was unclear how dominant the sale of CryptoArt was on the *OpenSea* platform, as opposed to say Collectibles, profile pictures (PFPs) and other NFTs generally. This was in contrast to *SuperRare* which was, and still is, the premium marketplace for CryptoArt, with CryptoArt being the sole focus of its business. However, on further analysis of the data, the literature and other sources, such as blogs and press articles, it was clear that certain platforms had more prominence than others in terms of CryptoArt NFTs, sales and numbers of users, even if not all were CryptoArt specialists. The following six platforms were therefore selected as a focus of research, based on their functionality, location, size and prominence both online and in the literature.

Opensea	(https://opensea.io)
NiftyGateway	(https://www.niftygateway.com)
Rarible	(https://rarible.com)
SuperRare	(https://superrare.com)
Foundation	(https://foundation.app)
KnownOrigin	(https://knownorigin.io exited the market in December 2024)

Selection was therefore discretionary rather than formulaic.[24] Findings are intended to capture a range or variation in the phenomenon, i.e. NFT platforms and CryptoArt, but are not generalisable to the NFT population as a whole.[25] However, it may be possible to reach a general conclusion by testing the findings of one case study against another.[26]

A more detailed technical overview of the six platforms selected for research is provided in the following Chapter 5.

For reference, the seven platforms not selected were:

[23] Statista, *Total Value of Sales involving an NFT in the art segment* (*Statista Research Department*, 26 November 2024) https://www.statista.com/statistics/1235263/nft-art-monthly-sales-value/; NFTGo.io https://nftgo.io; DappRadar https://dappradar.com; Dune https://dune.com.
[24] R.K. Yin (n 18) 61.
[25] P. Cane & H.M. Kritzer (n 14) 934.
[26] ibid 940.

Zora	(https://zora.co)
MakersPlace	(https://makersplace.com exited the market in January 2025)
Mintable	(https://www.mintable.app)
Magic Eden	(https://www.magiceden.io)
Portion	(https://opensea.io/collection/portion collection preserved on OpenSea)
Mint Gold Dust	(https://www.mintgolddust.com)
NFT Showroom	(https://nftshowroom.com)

5.2 Collecting Case Study Data

The main phenomena here are the NFT platforms, with the main evidence being the content of the platforms themselves, in particular their terms of service (ToS) and policies, help sections, frequently asked questions (FAQs), blogs, community guidelines etc. However, this content was then corroborated with multiple sources of evidence, for example references to the platforms in academic articles, blogs and newspaper reports, with such data triangulation helping to further understand the platforms and strengthen the validity of the case study data.

A pilot study of *OpenSea* was carried out to refine the research questions, and to develop a Protocol for the collection of data for each subsequent case. The Protocol developed explicit and planned procedures to develop data collection (Appendix 1).

Data was gathered in parallel with doctrinal analysis, with the final research design informed by both. It was necessary to analyse the current legal position, to be able to assess the platforms, not just in terms of how they operate in practice, but through the lens of the current law.

Data was gathered with a view to the copyright issues raised from the literature. Namely:

1. What rights are transferred with the "sale" of an NFT?
2. Is the unauthorised minting of an NFT copyright infringement?
3. What is the platform liability of the NFT platforms?

When collecting data, evidence on these three areas was sought. How the platforms deal with copyright, and their approach to both infringement and platform liability.

Data was collected during the last quarter of 2022, with detailed case reports written on each of the six cases. These case reports, together with ToS, previous and subsequent memos and other relevant specific content from the platforms themselves, was uploaded to and analysed using NVivo (Appendix 2). Coding (i.e., identifying passages of text that are linked by a common theme or idea) using NVivo was carried out in the Summer of 2023.

5.3 Analysis of Case Study Data

Reflexive Thematic Analysis has the advantage of being flexible both in terms of theory and coding.[27] It takes an iterative approach to Thematic Analysis, recognising its qualitative philosophy, and reflecting interpretation and depth of engagement by the researcher through their lens of cultural membership and social positioning, theoretical assumptions and ideological commitments.[28]

The phases of thematic analysis outlined by Braun & Clarke were adopted.[29] The process began with a familiarisation of the case study data. Reflecting the researcher's own assumptions from experience, background and understanding, codes were generated from the case study data using NVivo in order to identify repetitions, similarities and differences and to extract core themes and patterns from the data. Coding evolved throughout the coding process in order to reflect the data and an ongoing reflexive dialogue throughout the analytic process encouraged depth of engagement, exploratory researcher subjectivity and reflexivity.[30]

Coding using NVivo generated 70 codes, from a total of 1,128 references. A spreadsheet of the codes was compiled, and a summary and conclusion written for each of the codes. Colour coding of the codes within the spreadsheet also helped to highlight those with more references than others. The spreadsheet was then printed, and the codes cut out before being manually sorted into Umbrella and Core Copyright Themes. (Table 1)

The Core Copyright Themes are relatively self-explanatory, as they are based on the main legal issues raised in the literature. However, what became clear from the coding was that the Core

[27] V, Braun & Clarke, V. 'Reflexive Thematic Analysis' (*ThematicAnalysis.net*) https://www.psych.auckland.ac.nz/en/about/thematic-analysis.html.
[28] V. Clarke 'What is Thematic Analysis?' (*YouTube*, 2017) https://www.youtube.com/watch?v=4voVhTiVydc.
[29] V. Braun & V. Clarke, 'Using Thematic Analysis in Psychology' (2006) 3(2) Qual.Res.Psychol. 77-101, 87.
[30] ibid 79; V. Braun & V. Clarke (n 27).

Themes cannot be considered in isolation, and need to be considered within the overall context of the Umbrella Themes.

Table 1: Themes From Reflexive Analysis

Theme	**Number of codes**	**% of codes**	**Number of references**	**% of references**
Umbrella Themes				
Trust and Community Building	13	18.57	131	11.61
Mixed messages Web 2.0/Web 3.0	3	4.29	73	6.47
Accessibility	6	8.57	51	4.52
Private Ordering	5	7.14	146	12.94
Verification and curation	6	8.57	104	9.22
Core Copyright Themes				
Copyright - Rights	14	20.00	155	13.74
Copyright - Infringement	6	8.57	124	10.99
Platform Liability	17	24.29	344	30.50
Totals	**70**		**1,128**	

The next stage was to write more detailed memos on each of these themes in order to analyse and understand their relationship to each other (Chapters 6 and 7). Interpretation and analysis at this stage is more subjective and reflexive as per reflexive thematic analysis. However, once analysed questions can then be asked of the pattern of findings across the multiple cases together with questions asked by this research – calling on information beyond the case study evidence, together with normative questions about policy recommendations and conclusions, which go beyond the narrow scope of the empirical study.[31]

6. Ethical Considerations

This research involves evidence gathering from publicly available documents and NFT platforms, and involves no participant involvement. However, ethical approval was sought from and approved by the UEA School of Social Work Research Ethics Subcommittee (SWK S-REC) on 17th March 2022.

[31] R.K. Yin (n 18) 91.

7. Limitations

The collection of evidence focuses on content available on the platforms themselves, rather than interview data of those responsible for creating and steering the direction of the platforms and/or the users of such platforms. The subjective focus of this research is demonstrated and achieved through the legal lens of the researcher together with the assumed subjective assumptions of those designing, and commenting on, the platforms. Further research could be carried out to discover the views of such individuals, with regard to their understanding of copyright issues and user experience of the platforms.

Whilst attempts have been made to understand the technical aspects of NFTs, this is not the main focus of the research which remains fundamentally legal, and further inter-disciplinary research could be carried out in order to clarify and triangulate the legal data with technical know-how.

Finally, using NVivo meant that it was not possible to update any of the documents uploaded to NVivo beyond a certain date. All documents uploaded to NVivo for analysis was current as of 27 September 2023. This means that neither the functionality nor the content of the platforms has been updated since this date. [Subsequently *NiftyGateway*, *Foundation* and *KnownOrigin* have all updated their ToS, and updates have been made to content available on all of the platforms. *KnownOrigin* announced in July 2024 that they were winding down their operations, and on 5th December 2024 closed their marketplace.[32]]

[32] KnownOrigin, (*X*, 5 December 2024) https://x.com/KnownOrigin_io.

Chapter 5: Overview NFT Platforms

1. Introduction

Following analysis of the NFT CryptoArt market, six NFT platforms were selected for further case study research, based on their functionality, location, size and prominence both online and in the literature.

Opensea	(https://opensea.io)
NiftyGateway	(https://www.niftygateway.com)
Rarible	(https://rarible.com)
SuperRare	(https://superrare.com)
Foundation	(https://foundation.app)
KnownOrigin	(https://knownorigin.io)

It was necessary, as part of the case study research to investigate and compare the platforms, and this Chapter provides an overview of the functionality of the platforms. Below is a brief comparison of the platforms, intended to provide context for the analysis of the case study evidence in the following Chapters 6 and 7. Issues which specifically relate to copyright, such as verification, curation, royalties and the ToS will be covered more thoroughly within Chapters 6 and 7.

[N.B. As noted in Chapter 4 §7, all case study data uploaded to NVivo was up to date as of 27 September 2023. The platform sales figures in Table 3 below have since been updated, and changes to ToS have been noted in Table 4, but the new versions have not been analysed. Also, *KnownOrigin* announced in July 2024 that they were winding down their operations and on 5th December 2024 closed their marketplace.[1]]

[1] KnownOrigin, (*X*, 5 December 2024) https://x.com/KnownOrigin_io.

2. Platform Overview

The platforms all allow for NFTs to be created from various digital media files. The focus of the platforms varies, with *OpenSea* being the most generalist NFT platform, with less of a focus on digital art. *Rarible* is also more of a general NFT marketplace. However, *NiftyGateway, SuperRare, Foundation and KnownOrigin* all specialise in digital art, i.e. CryptoArt.

Table 2: Overview of NFT Platforms

Name	Overview of platform and digital media
OpenSea	The largest NFT platform. Trading in Art, Gaming, Memberships, Profile Pictures (PFPs), Photography and Music.
Nifty Gateway	Leading curated platform to buy, sell and store digital art and collectible Nifties, or NFTs. Wide range of NFTs including digital art, music and sports memorabilia.
Rarible	Community centric NFT platform. Various types of NFTs. Art, gaming, collectible and metaverse. (Used to have Art as a category but no longer - has moved away from focusing on Art)
SuperRare	Emphasis on digital art. "Buy and sell from world's top artists. Premier NFT Art platform". (PNG, JPEG, GIF, MP4, GLB)
Foundation	Platform for digital art. "Platform for buying, selling and trading limited-edition goods"
KnownOrigin	Platform for digital art "Discover, sell and collect NFTs". Images, videos, 3D, 360, Interactive NFTs, and 360 video.

3. Total Sales and Users

OpenSea, as the market leader, is by far the largest of the platforms with total sales volume one hundred times greater than the next in size. However, this statement is qualified by the fact that as *OpenSea* (in common with *Rarible*) does not specialise in digital art, it is not possible to isolate a figure for digital art sales from the overall sales figure.

Following *OpenSea* in market size is probably *NiftyGateway*. This is "probable" as it is not possible to obtain accurate data for *NiftyGateway*, as unlike the other platforms *NiftyGateway* is a custodial platform. A custodial platform is centralised, unlike all the other platforms which are decentralised. This means that *NiftyGateway* itself handles all of the transactions and management of NFTs, so such data is not publicly visible on the blockchain, as with the other decentralised platforms. The latest verifiable sales data available for *NiftyGateway* was

published by Statista on 5 April 2023, with data dating back to September 2021.[2] This data shows total sales between May 2020 and September 2021 for *NiftyGateway* of roughly $408.9 million, a figure which even if updated to the current date (July 2024) puts *NiftyGateway* in second place in terms of total sales.

Rarible, as a general NFT platform is next in size, followed by *SuperRare*, *Foundation* and *KnownOrigin.*. These final three platforms specialise in digital art but distinguish themselves from each other in terms of average sale price. Out of all six platforms *SuperRare* has the largest average sale price for an NFT at $13.18k, compared to *KnownOrigin* which has the smallest with just $348.04 per sale. *SuperRare* clearly aims for quality over quantity, selling itself as the most exclusive, "high end" platform.

KnownOrigin, although the smallest platform on all counts, has been primarily included here as it is the highest profile UK platform, whereas all of the others are based in the US.

Table 3: Platform Total Sales and Users

Platform	Total Sales Volume	Total Sales Volume	Users	(Buyers)	(Sellers)	Average Price	Total Number of sales
Date	**11.11.22**	**29.07.24**	**29.07.24**	**29.07.24**	**29.07.24**	**29.07.24**	**29.07.24**
OpenSea	$32.9BN	$37.22BN	5.67M	3.83M	3.56M	$519.96	71.7M
NiftyGateway	($408.9M)[3]						
Rarible	$308.96M	$322.14M	170.26k	133k	67.82k	$463.9	646.03k
SuperRare	$235.97M	$244.51M	6.1k	4.96k	2.67k	$13.18k	28.07k
Foundation	$176.5M	$183.96M	42.93k	25.72k	22.18k	$2.26k	96k
KnownOrigin	$7.8M	$7.85M	5.6K	4.89k	803	$348.04	22.56k

[Data (with the exception of *NiftyGateway*) for the above table was taken from DappRadar,[4] initially in November 2022 and then updated in July 2024]

4. Terms of Service (ToS) and Jurisdiction

All platforms have lengthy ToS, and all of which, together with other relevant content available on the platforms i.e. FAQs, community guidelines and blogs, have been further analysed for

[2] Statista, *Total monthly sales of NFTs on NiftyGateway worldwide from May 2020 to September 2021.* (*Statista Research Department,* 7 November 2024) https://www.statista.com/statistics/1243853/nifty-gateway-nft-monthly-sales-worldwide/.
[3] ibid.
[4] DappRadar https://dappradar.com/.

this research. The average word count for the ToS is just over 11,000 with the longest (*SuperRare)* at 20,000 words.

Table 4: Location, Jurisdiction and ToS

Platform	Date Established	Location	Jurisdiction	ToS Version Analysed	ToS word count
OpenSea	2017	USA	New York	04-Apr-23	9,375
NiftyGateway	2018	USA	New York	27-Dec-22	9,209
Rarible	2020	USA	California	05-Dec-22	12,190
SuperRare	2018	USA	Delaware	05-Apr-23	20,000
Foundation	2021	USA	California	28-Dec-22	9,456
KnownOrigin	2018	UK	England and Wales	23-Apr-21	5,929

[ToS were last updated for NVivo analysis on 27 September 2023. Since this date *NiftyGateway* and *Foundation* have updated their ToS and *KnownOrigin* ToS are no longer available.]

5. Functionality

From a functionality point of view, there is considerable variety amongst the platforms, leading to the conclusion that the technology is still developing, with no clear consensus amongst the platforms, and each trying to distinguish itself from the others.

Rarible originally focused on digital art, but relaunched as an aggregated platform, consolidating data from multiple NFT platforms, and allowing users to buy and sell NFTs from different platforms. *OpenSea* and *NiftyGateway* are also both aggregated platforms.

Rarible and *SuperRare* are Decentralised Autonomous Organisations (DAOs), meaning that they have no central leadership, but are collectively owned and managed through their members, with participation through the ownership of tokens.

NiftyGateway is the only custodial platform, which provides it with an advantage in terms of transaction fees. This is because there is no gas to pay on *NiftyGateway* transactions as the platform records transactions on a centralised server rather than on the blockchain. Gas fees are the fees that blockchain users pay to compensate for the computational resources required to execute transactions on a blockchain e.g. Ethereum.

Both *NiftyGateway* and *Rarible* are multichain platforms, meaning that they allow users to create and trade NFTs on blockchains other than Ethereum, and where gas fees are typically lower. Lazy minting is a feature which means that it is possible to mint an NFT without incurring gas, as gas fees are deferred and only payable when a NFT is actually sold. Initially heavily promoted by *OpenSea* as a cost saving feature, lazy minting has since October 2023 been discontinued by *OpenSea*, and it is now only available on the *Rarible* platform.

All of the platforms use distributed storage (i.e. IPFS) to store NFT data, and all, except *SuperRare* and *Foundation,* permit users to mint multiple-editions NFTs, i.e., every NFT on *SuperRare* and *Foundation* is a single-edition. Finally, unlike *Foundation*, *OpenSea*, *Rarible* and *KnownOrigin* allow the minting of NFTs with unlockable content. It is not clear whether this feature is available when minting NFTs with either *NiftyGateway* or *SuperRare*.

Table 5: Overview and Functionality of NFT Platforms.

Name	Aggregated Platform	DAO	Custodial	Multichain	Lazy Minting	IPFS	Multi-editions (ERC-1155)	Un-lockable Content
OpenSea	Yes	No	No	Ethereum, Polygon,Arbitrum, Optimism,Klaytn	Yes (up to 03.10.23) then No	Yes. (Ability to freeze metadata)	Yes	Yes
Nifty Gateway	Yes	No	Yes	No. Ethereum only.	No	Yes	Yes	?
Rarible	Yes	Yes. RARI token.	No	RARI Chain, Ethereum,Polygon, Immutable X, zkSync Era,Base, Astar zkEvm, Kroma, Celo, Moonbeam., Etherlink	Yes	Yes. (IPFS and Filecoin)	Yes	Yes
SuperRare	No	Yes. $RARE token.	No	No. Ethereum only.	No	Yes	No	?
Foundation	No	No	No	No. Ethereum only.	No	Yes	No	No
KnownOrigin	No	No	No	No. Ethereum only.	No	Yes	Yes	Yes

6. Fees and Royalties

This is a remarkably complex, opaque and difficult area to navigate. Suffice to say that the conclusion is the more verification and curation, i.e. exclusivity, a platform provides, the greater the cost. So, *OpenSea* and *Rarible* are the cheapest and *SuperRare* the most expensive. As summarised in the Table below, fees range from (in addition to gas) 2.5% of the transaction on a sale with *OpenSea* (payable by the buyer), to approximately 18% on a primary sale plus gas with *SuperRare* (with the seller bearing 15% and the buyer 3%).

It is not always clear who pays the transaction fees, and *SuperRare* and *KnownOrigin* offer reduced transaction fees on secondary sales in order to encourage users to remain with the platform. Gas fees vary depending on demand and network capacity at the time of the transaction, and royalties are challenging to navigate. The Royalty Registry Standard (EIP-2981) is an attempt to enforce and standardise royalty payments across the platforms. However, the standard has not been adopted by all of the platforms which means that if not adopted, royalties can be optional. Royalties need to be set by a seller. *NiftyGateway, SuperRare, Foundation* and *KnownOrigin* all enforce royalties on secondary sales on their platforms, but royalties on NFTs are not compulsory and are not enforced across the board. Interoperability between the platforms is challenging in terms of enforcing terms and royalties, all which makes for a challenging and complex ecosystem.

Table 6: Fees and Royalties

Platform	Fees on Primary Sales	Secondary Sales	Royalties	Royalty Registry Standard. (EIP-2981)
Opensea	Gas plus 2.5% transaction fee (payable by buyer)	As primary sale	Up to 10% (optional or enforced)	No
Nifty Gateway	No gas fee if on *NiftyGateway*. 5% transaction fee, collected from final price. Transitioning to a 2.5% model.	As primary sale	Yes.10%. Enforced when secondary sales via platform.	Yes
Rarible	Regressive fee structure. Ranges from 1% transaction fee (split between buyer and seller) for sales greater than $4,000 to 15% (split) for sales of $0 - $100	As primary sale	Variable up to 50% on both native and aggregated listings	Yes
SuperRare	3% on total sale by buyer. 15% by artist -primary sale fee, plus gas.	3% on total sale by buyer. 10% royalty to artist (paid by seller), plus gas.	10%	No
Foundation	5% plus Gas	5% transaction fee plus 10% royalty, plus Gas.	10%	Yes
KnownOrigin	15% transaction fee plus Gas	2.5% transaction fee plus 12.5% royalty payment to artist.	12.5%	Yes

7. Verification and Curation

In terms of verification, the platforms range from *OpenSea* where anyone is able mint or buy an NFT, to those which have some verified collections (*Rarible),* through to totally curated marketplaces such as *SuperRare,* where artists need to be invited and approved. Generally, the greater the level of curation and verification, the greater the cost. Verification and curation will be covered in more detail in the following Chapter 7 when considering the platforms' approach to Copyright.

Table 7: Verification and Curation

Platform	Verification and curation
Opensea	Anyone can create/buy NFT. Can apply for a blue tick verification. Verifies creators whose accounts are of a certain size. Looking to reduce size criteria. Trust and safety team "actively monitors" the platform. Otherwise, free access.
Nifty Gateway	Yes. Centralised curated marketplace and verifies each artist. Collectors also need to verify profile
Rarible	Yes. Can apply for verification, which is manually reviewed by an individual and users get a yellow checkmark. But can still list without verification
SuperRare	USP. Used to have team of 18 curators who did individual verification. Now pushing for a more decentralised curation withing the DAO community. Curatorial decentralisation.
Foundation	Creators need to verify profile with either a twitter or Instagram account before creating a collection. (Used to be invite only) Can apply for a curated drop
KnownOrigin	Yes. Application process. Takes a month. Curated collections

8. Conclusion

This Chapter demonstrates how widely the platforms vary in terms of size, functionality, business models and fee structures. So, for example whether royalties can be enforced by an artist; how much fees are and when and by whom they are paid; whether the platform is aggregated, multichain or a decentralised autonomous organisation (DAO); and whether a platform allows users to mint editions and/or provide unlockable content. The technical landscape is clearly still in evolution, however from both a digital artist and a collector point of view, this is a challenging, confusing and opaque ecosystem to navigate.

The above provides a succinct overview, within the limit of the researchers technical know-how, for context and background to the following Chapters 6 and 7. Specific terms are further defined in the Glossary, and more detailed explanations provided in the following Chapters where functionality is specifically relevant to copyright issues.

Chapter 6: Analysis of Umbrella Themes from the Case Study Data

1. Introduction

This Chapter provides an analysis of the Umbrella Themes that emerged from the case study data. During the thematic analysis of the case study data it became clear that the Core Copyright Themes are situated, and need to be discussed within the context of the overarching Umbrella Themes. Each of the Umbrella Themes will be discussed below, before turning to the Core Copyright themes in the following Chapter 7.

As discussed in Chapter 4, coding of the case study data using NVivo generated 70 codes (references linked by a common theme or idea) from 1,128 references (examples of relevant text or passages). The codes were then grouped into themes. Within the Umbrella Themes, whilst "Trust and Community Building" generated the most codes, in fact "Private Ordering" generated the most references, showing no particular pattern to the data.

Table 8: Themes From Reflexive Analysis

Theme	**Number of codes**	**% of codes**	**Number of references**	**% of references**
Umbrella Themes				
Trust and Community Building	13	18.57	131	11.61
Mixed messages. Web 2/Web 3	3	4.29	73	6.47
Accessibility	6	8.57	51	4.52
Private Ordering	5	7.14	146	12.94
Verification and curation	6	8.57	104	9.22
Core Copyright Themes				
Copyright - Rights	14	20.00	155	13.74
Copyright – Infringement	6	8.57	124	10.99
Platform Liability	17	24.29	344	30.50
Totals	**70**		**1,128**	

[N.B. The footnotes in this Chapter reference content available on the platforms or in platform specific blogs, all (unless noted in the text) last accessed on 29 December 2024. A reference

in bold identifies a document uploaded to NVivo for analysis, which refers to the *Bibliography for Case Study Data uploaded to NVivo* at **Appendix 2**]

2. Trust and Community Building

NFT platforms make a point of demonstrating trust and establishing an emotional connection, with trust, safety and customer experience being core areas of focus. From *Foundation* where, "creativity is valued, and your digital objects belong to you",[1] to *OpenSea* where they work "around the clock to welcome more people into the world of NFTs".[2] *OpenSea* aims, "to build and support an ecosystem that is safe and welcoming,"[3] whilst, "helping protect creators and collectors and ensuring our community can navigate the world of NFTs confidently",[4] and one of *Rarible's* primary goals is "to ensure the safest possible experience for our users".[5] *NiftyGateway* is a custodial platform and refers to its role as a "trusted custodian", holding itself out as the "oldest and most trusted third party operator in the NFT space".[6] Both *Foundation* and *OpenSea* have "Trust & Safety Teams". The *Foundation* team, "takes every report seriously and reviews each one at length",[7] whilst the team at *OpenSea* feels a "huge responsibility to ensure our users are safe",[8] with a "number one objective as a company to improve trust".[9]

NFTs are a new and technically challenging technology, in a competitive and fast-moving market. Platforms need to be as accessible, understandable and attractive as possible to gain and retain custom, and therefore need users, both creators and collectors alike, to feel safe, and to trust and understand their marketplaces, in order that they mint and/or collect NFTs.

Platforms compete with others in a competitive market to acquire and retain users. They are developing at speed and have been seen to respond rapidly when issues of trust arise. *OpenSea*

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[1] *Foundation*, 'How to Create on Foundation' https://foundation.app/how-to-create.
[2] **OS2**.
[3] **OS7**.
[4] **OS2**.
[5] *Rarible*, 'What is Verification and how do I apply?' https://help.rarible.com/hc/en-us/articles/360060619032-What-is-verification-and-how-do-I-apply-.
[6] *NiftyGateway*, 'An explanation of Nifty Gateway's Custody Solution' https://help.niftygateway.com/hc/en-us/articles/4409003713299-An-Explanation-of-Nifty-Gateway-s-Custody-Solution.
[7] *Foundation*, 'How can I report an NFT, collection or profile to Foundation?' https://help.foundation.app/hc/en-us/articles/4419474921115-How-can-I-report-an-NFT-Collection-or-Profile-to-Foundation-.
[8] **OS3**.
[9] **OS3**.

rapidly developed a copymint policy when it became apparent that, following its open access policy, the platform had a growing issue of plagiarism.[10] *Rarible* also moved quickly to prevent infringement by increasing verification. It used to allow unverified users sales to appear in search results. However, following "an uptick in unauthentic items" the marketplace enabled only verified items to subsequently appear in search results.[11] In both cases, rapid action was taken to increase user trust and confidence, and prevent users from leaving the platform.

An NFT platform also needs its users to connect with its platform, i.e. for them to become emotionally engaged so that they choose that platform to mint or collect NFTs, return to it and recommend it to their peers. A term used to describe this behaviour is "stickiness", i.e. how sticky a platform is depends on how long a user spends on that platform, and how often they return. If users feel connected either in terms of feeling part of a community, or if they have some financial or technical incentive to return, then they consequently are more likely to do so, and are more likely to become a regular user.

So, the NFT platforms try to build a community, or "club", attempting to emulate a social-network community feel. "NFTs are a way of showing support for creators while building a sense of community with fellow token holders."[12] Or as *SuperRare* puts it, "We are applying the physics of the internet, where everything is open and visible, to art collecting and that makes it inherently social".[13] Each platform has its own rules, guidelines and community with some more exclusive than others, and with DAOs at the far end of this scale given the complexity and additional cost involved in becoming a "member" of a DAO. The platforms all maintain their own social media channels. All have X and Instagram channels, and with the exception of *Foundation* and *KnownOrigin,* moderate and communicate with users via Discord. All of the platforms have a degree of verification and curation, both of which help to build a sense of community and trust. Creators are mostly required to apply to a platform to be verified in order to be able to mint NFTs, with the exception of *OpenSea* and *Rarible* where verification is optional. Exclusivity is a way for a marketplace to differentiate itself from others, with *SuperRare* being the most exclusive, positioning itself as a high end NFT gallery – focusing

[10] **OS2**.
[11] *Rarible*, 'What is Verification and how do I apply?' https://help.rarible.com/hc/en-us/articles/360060619032-What-is-verification-and-how-do-I-apply-.
[12] *OpenSea*, 'What is OpenSea's copymint policy?' https://support.opensea.io/en/articles/8867065-what-is-opensea-s-copymint-policy.
[13] **SR2**.

on CryptoArt, "from the world's top artists",[14] with the most expensive fees and rigorous verification procedure, whereas *NiftyGateway* holds itself out as, "the premier NFT marketplace for beginners, experts and everyone in between."[15]

Community Guidelines and Codes of Conduct also help to build a feel of community and trust, with users encouraged to "be respectful to all, and treat others as you would expect to be treated".[16] *KnownOrigin*, "Reputation is king in this space, so we ask those involved to respect other artists and collectors in these regards."[17] Equally, users are required to behave lawfully and are encouraged to keep the community safe by reporting content that violates community guidelines.[18] *OpenSea* welcomes feedback from the community, to assist with its "continuous improvements",[19] and *SuperRare* believes that, "the more eyes on *SuperRare* artwork benefits the community as a whole."[20]

Platforms also partner with third parties and develop IRL collaborations. *SuperRare* developed a pop-up art gallery in New York, [21] and has formed a partnership with Ox Society, a physical gallery in Montreal. [22]

However, this emphasis on trust and community building is contradictory, as it is not reflected in the small print, i.e. the platforms' ToS. It creates a level of confusion, in that it fosters a degree of false security on the behalf of users, and raises issues relating to mixed messaging, accessibility, private ordering and platform liability, all themes that will be discussed further in this Chapter and the following Chapter 7.

NFT platforms want to be and seen to be decentralised, adopting a Web 3.0 ideology and technology. However, and as *OpenSea* discovered, following the reversal of its open access

[14] *SuperRare*, https://superrare.com/.
[15] *NiftyGateway*, https://www.niftygateway.com/.
[16] *SuperRare* 'SuperRare Community Guidelines' https://superrare.notion.site/SuperRare-Community-Guidelines-b9c4fc521f4344a39cac7bd13d44a56f.
[17] *KnownOrigin*, 'Minting art' https://docs.knownorigin.io/en/articles/6103801-minting-art accessed 30 September 2024 [no longer available].
[18] *Rarible*, 'Rarible Community Guidelines' https://rarible.com/community-guidelines.
[19] **OS2**.
[20] *SuperRare* 'SuperRare Community Guidelines' https://superrare.notion.site/SuperRare-Community-Guidelines-b9c4fc521f4344a39cac7bd13d44a56f.
[21] Jing Daily Culture, 'SuperRare Gets Physical' (*Jing Daily Culture*, 19 May 2022) https://jingculturecrypto.com/superrare-gallery/.
[22] **SR2**.

policy which allowed anyone access to mint NFTs,[23] users require and expect a level of Web 2.0 customer support, especially given the "newness" and complexity of the technology. As will be discussed in the Platform Liability theme in Chapter 7, platforms are clearly nervous of accepting or acquiring liability, and without exception, all of the view that as decentralised platforms they merely "facilitate" transactions between users, and are therefore not party to any such agreements. As evidenced in the Platform Liability theme, they also clearly attempt to avoid any liability for monitoring content on their platforms, with any support for users lacking in transparency, whilst at the same time trying to build communities and trust through, for example verification and curation. From an accessibility point of view, levels of "gatekeeping" are required in order to engender trust in users – so verification for example, but equally the more the perception of exclusivity, the greater the barriers to accessibility, with platforms risking recreating the gatekeeping of the IRL world.[24] A gatekeeper role is contrary to the decentralised P2P Web 3.0 ideology, putting a platform in an invidious position when considering platform liability generally, seeing that they wish to merely "facilitate transactions".

Platforms promote the message of creators being in control of their artworks. *KnownOrigin* "champions fair compensation for creators", giving creators their own smart contracts, meaning that they can list NFTs on multiple platforms, customise and time "drops" (sales) and set their own royalty fees.[25] With *NiftyGateway*, artists are in control and have "greater control over the work, not to mention an opportunity to create a livelihood for themselves, *ante-mortem*", [26] and *OpenSea* "recognises the efforts that original creators put into their works". [27] However, the platforms need to follow this message through, both in terms of their actions and their small print, by providing proper resources to verify creators, and clarity and accountability for opaque application and acceptance processes. Platforms need to support creators and collectors alike, both by educating and advising creators and likewise assisting collector and creators with issues of, in a copyright context, plagiarism. i.e., copyminting. Customer service is generally lacking and vague, and as outlined in the overview of NFT Platforms in Chapter 5, small print in the ToS is far too lengthy and indigestible to most. Customer support is not

[23] **OS2**.
[24] Jing Daily Culture (n 21).
[25] *KnownOrigin*, 'Vault update and our policy on royalties' https://knownorigin.io/journal/cms/stories/vault-update-and-our-policy-on-royalties accessed 30 September 2024 [no longer available].
[26] *NiftyGateway*, 'What is an NFT?' https://www.niftygateway.com/what-is-an-nft/.
[27] *OpenSea*, 'What is OpenSea's copymint policy?' https://support.opensea.io/en/articles/8867065-what-is-opensea-s-copymint-policy.

encouraged, with an emphasis on parties resolving issues between themselves, and community policing. *Foundation* recommends that before an artist considers filing a DMCA takedown notice, they "reach out to the creator directly to see if the issue can be resolved amicably".[28] With *SuperRare*, "the Company is not the ultimate decider - the Community is!"[29] Commentary also suggests that platforms are not that responsive in dealing with customer complaints or issues of customer service.[30]

Platforms hide behind onerous ToS, avoiding any liability and relying on community guidelines to advise users how to behave, and on the community to report bad behaviour. They need to be held accountable for their actions. It is not enough to talk of "Trust and Safety", how they put their users' safety first and support creators, of "industry collaborations" and how the platforms need to work with each other and with wallet providers, and how they "delist all stolen art" when such sentiments are not in fact followed through either in actions or in the small print. Users need to be able to trust the platforms. Collectors need to able to trust what they are buying, and the platforms need to be made accountable for promises made.

3. Mixed Messaging. Web 2.0/Web 3.0

Web 3.0 is the promise of decentralisation, with users dealing with each other on a P2P basis and platforms merely "facilitating transactions". "In Web 3.0, your creativity is valued and your digital objects belong to you."[31] As we have seen with the Trust and Community theme above, the problem is that platforms are giving the impression of being more centralised, i.e. Web 2.0 in terms of their selling points to users, wanting users to trust them, participate in their communities and believe that their platforms are safe. The combination of lack of clarity surrounding the law, together with the concept of the decentralised Web 3.0, supposedly with no central authority having any responsibility, leads to consumer confusion. Web 3.0 is an ideological/technical position to take, but from a legal and customer care point of view it creates mixed messages. The platforms all take, and some more than most, a considerable cut of any transaction, whilst ultimately shouldering none of the responsibility DAOs are worthy

[28] *Foundation*, 'Guide: Digital Millennium Copyright Act or "DMCA"' https://help.foundation.app/hc/en-us/articles/4419467336603-Guide-Digital-Millennium-Copyright-Act-or-DMCA.
[29] **SRTOS** Clause IX (h). Penalties for Violations.
[30] A. Lusina, 'As Theft Thrives, Artists Say OpenSea Does Little to Protect Copyrights' (*PetaPixel*, 20 December 2021) https://petapixel.com/2021/12/20/as-theft-thrives-artists-say-opensea-does-little-to-protect-copyrights/.
[31] *Foundation*, (*Working in Content*) https://workingincontent.com/companies/foundation.

of their own chapter, but add a further layer of technical ideology adopted in order to further avoid liability. Equally, issues arise as to whether a platform is custodial or non-custodial. Again, a technical distinction, but all platforms are all to some degree providing the same service and need to be considered as such, regardless of their structure.

All of the platforms make it clear in their ToS that they have no obligation to monitor. However, they clearly all do, and ultimately retain absolute authority to delist any material from their platform, generally for any reason at all, without accountability and at their own discretion. The obligation not to monitor is also confusing when you consider that the selling point for most of the platforms is a degree of verification or curation. Also, as the platforms rely on safe harbour rules in terms of avoiding liability this clearly puts the onus on the user to "do your own research", (DYOR). *OpenSea* points out that, "Web 3.0's decentralised nature means NFT buyers and sellers are responsible for maintaining its safety" and, "In the same way that buyers of physical fine art need to be aware of counterfeit work, NFT buyers need to do the same. But, while there are experts who can authenticate and appraise fine art, buyers of NFTs are responsible for evaluating projects using their own criteria."[32]

Legal certainty would help to clarify exactly what the liability of a platform liability should be, which then needs to be reflected in the wording on a platform., rather than what exists at the moment which is a disconnect between how a platform "sells its service" and the reliance of Web 3.0 ideology in the small print of its ToS.

4. Accessibility

This theme refers to technical considerations adopted by platforms to make their services as available, cost effective and wide ranging as possible. For example: reducing the cost to users by allowing lazy minting; providing aggregated and multi-chain platforms, and the availability and enforcement of royalties. Essentially, platforms provide incentives, whether financial or otherwise to attract users. However, the more wide-ranging a platform is from a technical point of view, the more complex it becomes to understand and access – with complexity providing a barrier to accessibility. There is also the question of verification – the decision to either make a platform available to a wider audience, or create a more exclusive community? As discussed

[32] *OpenSea*, 'How to Stay Protected in Web3' (*OpenSea*, 3 November 2022) https://opensea.io/learn/web3/how-to-stay-protected-in-web3.

in Chapter 2, CryptoArt does appear to be enduring, but it is likely that we are going to see more convergence of the online creative economy with the art market, in order to provide legitimacy and reputation. But, with this will come responsibility, and the need for technical and legal clarity and education in order for the platforms to warrant the trust from users that they are clearly attempting to build. This ultimately might lead to less accessibility, and risk the recreation of the gatekeeping of the IRL art world, but in return for higher levels of trust, legitimacy and customer support.

5. Private ordering

Consistent with these themes is that of private ordering. We have a new technology, or way of doing things i.e., selling digital art. However, each platform adopts and adapts the technology differently, resulting in considerable technological differences and nuances, as evidenced in Chapter 5. Whether, for example a platform is a custodial platform (*NiftyGateway*), an aggregated platform (*OpenSea, NiftyGateway* and *Rarible*) and/or a DAO (*Rarible* and *SuperRare*). Whether a creator is able to mint single or multiple editions (all apart from *SuperRare* and *Foundation*), and differences in fees and the enforcement of royalties. Differences in levels of verification (i.e., checking creators are who they say they are and the quality of their work) and curation (i.e., managing and collating collections and creators) – to name but a few. This, in conjunction with a confusing legal landscape leads to confusion, mixed messaging and inconsistencies. Plus, you have different jurisdictions (mostly NYC, USA, plus Delaware and one in the UK – *KnownOrigin*).

To put it bluntly, from a legal point of view the platforms all appear to be making it up as they go along. They pick and choose which bits to "borrow" from each other, build on and develop. They are essentially self-regulating. *OpenSea*, "We consider an NFT a 'copymint' if it was created with the intent to deceive users into thinking it's the original", and "what we do and don't class as a copymint may evolve over time".[33] There is no obligation to disclose details of any decision, whether that be to verify an artist, delist an NFT, remove profile information or disable an account. As pointed out by *OpenSea* and echoed across the other platforms, "We reserve the right to decline to verify an account or remove verified status for any reason and

[33] *OpenSea*, 'What is OpenSea's copymint policy?' https://support.opensea.io/en/articles/8867065-what-is-opensea-s-copymint-policy.

without notice."[34] The platforms all retain the right to delist NFTs at any time and for "any or no reason", [35] with many having draconian terms in their ToS, such as the right to terminate if a breach in is in the "letter or spirit of these terms",[36] or "to the fullest extent provided by law and common sense".[37] *NiftyGateway*, as the only custodial platform has more control over users' NFTs, and states how, "so long as there is no evidence of illegal activity, *NiftyGateway* will never freeze or confiscate your NFTs".[38] However, it then adds in its ToS that should it have any "reasonable belief" of illegal activities, it will "in its sole discretion, confiscate any Nifties purchased and/or deem such transactions null and void."[39] Further, "any content that violates any of *NiftyGateway's* policies may be obfuscated or deleted by *NiftyGateway*, in its sole discretion",[40] and they may, "in our sole discretion, remove Profile Information at any time and for any reason without notice."[41]

SuperRare can take "whatever means it deems necessary" to enforce its no double minting rule,[42] and is "afforded any "reasonable interpretation [..] that enables it to prohibit activity that it deems against the 'spirit of the rule'".[43] *OpenSea* adds that a user understands that *OpenSea* may, "in its sole discretion disable your Account and/or reassign your username or associated URL".[44]

Transparency is clearly an issue here as well. Verification and curation processes are generally not clear, and information on fees and royalty payments is notoriously hard to find and fathom. The emphasis is on DYOR, with the user warranting that they know what they doing, and that they have done all their research, but this is somewhat challenging when the information is lacking, difficult to find – or vague. *OpenSea* supposedly implemented a new "streamlined,

[34] *OpenSea*, 'What is a verified account or badged collection?' https://support.opensea.io/en/articles/8867072-what-is-a-verified-account-or-badged-collection.
[35] **RTOS** Clause 2.6 *Rarible* may deny access to or use of the Service.
[36] **FOTS** Clause 8. Termination rights.
[37] **SRTOS** Clause I.A. These Terms Set Forth a Legally Binding Agreement.
[38] *NiftyGateway*, 'An Explanation of Nifty Gateway's Custody Solution' (*NiftyGateway Help Centre*) https://help.niftygateway.com/hc/en-us/articles/4409003713299-An-Explanation-of-Nifty-Gateway-s-Custody-Solution.
[39] **NGTOS** Clause 4. Account Suspension.
[40] **NGTOS** Clause 8. Creator Content.
[41] **NGTOS** Clause 7. Profile Information.
[42] **SRTOS** Clause VII.D Enforcing the No Double Minting Rule.
[43] ibid.
[44] **OSTOS** Clause 2. Accessing The Service.

in-product experience" regarding verification, as "we've heard from our community that eligibility for verification and badging is opaque, and the process is slow and cumbersome".[45]

Users are encouraged to be proactive in reporting issues regarding plagiarism, "we believe that these are the best way to ensure that *Foundation* remains a safe and inclusive space".[46] *SuperRare* in its Community Guidelines is, "dedicated to building an ecosystem that empowers artists and collectors."[47] However, it continues by saying how, "We cannot do it without your help".[48] *SuperRare* even includes reporting as a mandatory requirement in its ToS, "You agree to report suspicious market activity of other users […] If you are specifically aware of other *SuperRare* Users that are in violation of these Terms or applicable laws, then you must promptly inform the *SuperRare* team."[49] And *Rarible* in its Community Guidelines emphasises how collectors need to "keep the community safe by reporting content which violates these guidelines."[50]

However, when it comes to reporting issues - processes, timelines and outcomes are not clear. *Foundation*, "while not every report results in action, we want you to know that our Trust & Safety team takes every report seriously and reviews each one at length"[51] Beyond this, *Foundation* provides no information regarding timelines or outcomes. *SuperRare*, "The Company will make best efforts to, but assumes no obligation, to provide notice of content removal to affected Users."[52] Artists have reported major issues with *OpenSea*, complaining that the company has an overly arduous process to report stolen art and how it is too slow to act once a complaint is filed, [53] suggesting *OpenSea's* goals are not well aligned with those of an artist, and how it makes the process as convoluted as possible so as not to dedicate resources to resolving claims.[54]

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[45] **OS2**
[46] *Foundation*, 'How can I report an NFT, collection or profile to Foundation?' https://help.foundation.app/hc/en-us/articles/4419474921115-How-can-I-report-an-NFT-collection-or-profile-to-Foundation.
[47] *SuperRare* 'SuperRare Community Guidelines' https://superrare.notion.site/SuperRare-Community-Guidelines-b9c4fc521f4344a39cac7bd13d44a56f.
[48] ibid.
[49] **SRTOS** Clause V.G Users Agree to Report Suspicious Activity
[50] *Rarible*, 'Community Guidelines' https://rarible.com/community-guidelines.
[51] *Foundation*, 'How can I report an NFT, collection or profile to Foundation?' https://help.foundation.app/hc/en-us/articles/4419474921115-How-can-I-report-an-NFT-collection-or-profile-to-Foundation.
[52] **SRTOS** Clause II.G. Accessing and using the Service.
[53] A. Lusina (n 30).
[54] ibid.

This also chimes with the Mixed Messages theme discussed above at §3, in that platforms are keen to be seen to be transparent in order to build trust amongst their users and a sense of community, but it is questionable as to how much they actually adopt such policies in practice. Devin Finzer, co-founder of *OpenSea* states how, "Trust, safety and customer experience are core focus areas for us, starting with transparent user guidelines and policies, laid out in our ToS."[55] However, given the length, complexity, and lack of transparency within *OpenSea's* ToS, this remains a moot point. "OpenSea is under no obligation to disclose the details of its decision [to take such action] with you."[56]

Issues of private ordering and transparency are particularly acute with copymint prevention. The term "sole discretion" is frequently used, with no obligation to disclose details of decisions. The platforms all make it clear that they have no obligation to monitor, but all reserve the right to do so. *KnownOrigin* states in its ToS how, "Although we are not required to monitor [content] we may, in our sole discretion, remove or delist Content at any time and for any reason, without notice," before continuing, "we may monitor [Content] to detect and prevent fraudulent activity or violation of these Terms."[57] Copymint policies which use "dedicated human review" or "image recognition technology",[58] provide little comfort. "We do not publicise our internal guidelines", "we may consider one of the following eight characteristics,"[59] and policies are constantly evolving. "Works that are judged by *OpenSea's* user safety team to infringe the IPR of others may be removed at any time."[60] None of this corresponds with how platforms are attempting to build communities and trust, or issues such as natural justice when, for example, an NFT can be delisted without a creator's knowledge, or a creator is unable to list an NFT as it fails the image recognition technology. *SuperRare* adds that it reserves the absolute right to remove any content, "involved in an actual or suspected violation of these terms or the law,"[61] and how it has, "the unilateral authority and discretion

[55] **OS3**.
[56] **OSTOS** Clause 2. Accessing The Service.
[57] **KOTOS** Clause 7. What obligations do if have if I am an artist?
[58] **OS2**.
[59] *OpenSea*, 'What is OpenSea's copymint policy' https://support.opensea.io/en/articles/8867065-what-is-opensea-s-copymint-policy.
[60] *OpenSea*, 'Are spin-off, homage, or remix collections allowed on OpenSea?' https://support.opensea.io/en/articles/8867067-are-spin-off-homage-or-remix-collections-allowed-on-opensea.
[61] **SRTOS** Clause II.G. Removing Content from the site.

to remove, suspend, or revoke an artists' access to the *SuperRare* platform for posting unoriginal content, whether or not a credible "fair use" defence exists".[62]

Finally, the platforms all reserve the right to "terminate or suspend the accounts of repeat infringers,"[63] but with little as to how a user achieves this accolade.

6. Verification and Curation

As mentioned above in §2 and discovered by *OpenSea* and *Rarible,* the level of verification adopted by a marketplace appears to be directly proportionate to the amount of plagiarism occurring on a platform, i.e. the greater the verification the less plagiarism that occurs. However, increased levels of verification lead to greater costs for the platforms, and ultimately the users – thereby reducing accessibility both from a cost and access point of view.

Generally, verification of users, i.e. creators, leads to questions of access. Some platforms, for example *Foundation*, only require users to demonstrate that they are human beings. So, in order to mint an NFT on *Foundation* all a user is required to do is create a profile and verify the profile by adding at least one social media account.[64] Curiously, originally *Foundation* was an invite only platform. The reason given for moving away from this policy is that originally they wanted to be able to grow the platform at a sustainable pace, but they are now in position to support more creators and "open the doors to all".[65] A more cynical interpretation might be that creators were not in fact beating their doors down? The verification process for other platforms can be a little more vague. *KnownOrigin* for example has an "application window",[66] during which an artist can apply with a profile and a portfolio of no more than five works, together with a brief summary of their work and why they should be accepted.[67] However, it is not clear when or how often the window opens (it is currently closed), although they do say that they try to process applications within one month.[68] *OpenSea* allows all to apply, but then

[62] *SuperRare*, 'Fair Use for NFTs and CryptoArt' https://help.superrare.com/en/articles/4792383-fair-use-for-nfts-and-crypto-art.
[63] **KOTOS** Clause 8. Ownership of the Tokens
[64] *Foundation*, 'Connect your wallet to Foundation' https://help.foundation.app/hc/en-us/articles/7244206753307-Connect-your-wallet-to-Foundation.
[65] *Foundation*, 'Creator Invites No Longer Applicable' https://help.foundation.app/hc/en-us/articles/4490682972315-Creator-Invites-No-Longer-Applicable- [article no longer available].
[66] *KnownOrigin*, 'Creator Application Process' https://knownorigin.io/journal/cms/stories/artist-application-process accessed 30 September 2024 [no longer available].
[67] ibid.
[68] ibid.

will verify specific accounts which conform with specific criteria, generally those which have had significant sales or interest.[69] Equally, *Rarible* allows all to list, but in addition the ability to also apply for a manually reviewed verified account,[70] which does appear to be a relatively thorough process that creates legitimacy and visibility for a collection on the platform. *Rarible* did attempt to remove verification, but re-introduced it following a spike in copyminting.[71] *SuperRare* has the most opaque process, as it is an "invite only" platform, "The Company invites only Creators that it deems credible and talented in its sole discretion",[72] although it appears to be moving towards a model which includes, "community approved curators".[73]

Curation and verification are linked, which does create a level of confusion. Verification is essentially the process of verifying users, but platforms, for example *NiftyGateway* will also verify external listings which are available for sale via its platform. Curation however relates more to specific collections that have either been "curated", so collected by the platform or by curators who have the authority to do so. The more expensive (in terms of transaction costs) platforms, for example *Foundation*, *NiftyGateway* and *SuperRare* seem to be moving towards a decentralised curation model, whereby users are able to curate collections. Curiously, they are the platforms which originally traded on being more expensive, high end, premier and exclusive – trading on the verification and curation i.e., legitimacy that they provided. It is pure speculation, but it may well be that they are discovering that providing this level of support is not sustainable, either from a cost, manpower, or platform liability point of view, so are seeking to "outsource" such solutions.

Generally, none of the verification and curation processes are particularly clear and all are subject to change and constant tweaking. Again, from a point of mixed messaging, confusion arises as the platforms are, to some degree, being seen to provide a level of verification and curation. *NiftyGateway*, "collections on our page are either curated or verified by our team, so

[69] *OpenSea*, 'What is a verified account or badged collection?' https://support.opensea.io/en/articles/8867072-what-is-a-verified-account-or-badged-collection.
[70] *Rarible*, 'How to get your collection verified?' https://help.rarible.com/hc/en-us/articles/14370508618253-How-to-get-your-collection-verified-.
[71] *Rarible*, 'What is Verification and how do I apply?' https://help.rarible.com/hc/en-us/articles/360060619032-What-is-verification-and-how-do-I-apply-.
[72] **SRTOS** Clause VII.I. Creator Authentication by the Company.
[73] ibid.

you don't have to worry about buying a scam project,"[74] and *SuperRare* "collectors should (and can!) be confident that every item on *SuperRare* is an original and lawfully minted creation that does not infringe on the IP of others."[75] However, none of platforms stands behind any promise that they may make regarding verification and curation, and all emphasise that they are in no way liable for any such actions or promises, and that the responsibility is very much on the user to DYOR.

An additional term carelessly used by the platforms is authentication. *OpenSea* talks of improving "authenticity" and verifying an "authentic creator's account", whilst "keeping scammers out of the system".[76] They talk of helping users to find "authentic content,"[77] and how they are "committed to improving trust and authenticity."[78] Equally, *Rarible* promises that, "we take a lot of time and attention to make sure that only authentic creators can make successful sales".[79] This comes down to themes as discussed above, in that the platforms are wanting users to trust in and help build their communities, but how much they stand behind such messages will ultimately impact on their legitimacy.

7. Conclusion

In summary, and in defence of the platforms, they are operating in what is a very challenging and fast moving technical and legal environment. However, in order to provide substance in the small print to the platforms' clear intentions to create trust and communities, reduce confusion and bolster protection for users, the law needs to be clarified so to provide a robust framework within which the platforms can properly develop legitimate business models. Without legal certainty platforms will continue, and be advised to limit their liability to the fullest extent possible, ultimately harming consumers and increasing opaqueness and confusion in the marketplace. With that in mind we now turn to the Core Copyright Themes, and how platforms actually deal in practice with the specific issues of copyright and platform liability.

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[74] *NiftyGateway*, 'An Explanation of Nifty Gateway's Custody Solution' (*NiftyGateway* Help Centre) https://help.niftygateway.com/hc/en-us/articles/4409003713299-An-Explanation-of-Nifty-Gateway-s-Custody-Option.
[75] *SuperRare*, 'Are NFTs and CryptoArt Protected by Copyright?' https://help.superrare.com/en/articles/7225642-are-nfts-and-crypto-art-protected-by-copyright.
[76] **OS2**.
[77] **OS3**.
[78] **OS5**.
[79] *Rarible*, 'Verification on Rarible, Demystified' (*Medium*, 11 April 2021) https://rarible.medium.com/verification-on-rarible-demystified-4d2ce51e92ae.

Chapter 7: Analysis of Core Copyright Themes from the Case Study Data

1. Introduction

Having discussed the Umbrella Themes in the previous Chapter 6, this Chapter now turns to the Core Copyright Themes. As the platforms are all different, more individual comparison is required, as is more detail and depth from the terms of service (ToS). Questions of enforceability and legality will be covered in detail in the following Part IV.

Unlike with the Umbrella themes, where there was no pattern to the data, here there clearly is a pattern. Analysis of the Case Study Data reveals how issues relating to platform liability are responsible for nearly one third of all of the references across all of the themes, and a quarter of the codes. Clearly, platform liability is of import to the platforms and, without exception, they all go out of their way to limit all and any liability to the user, a position at odds with the supportive and inclusive impression that they otherwise foster.

Table 9: Themes From Reflexive Analysis

Theme	**Number of codes**	**% of codes**	**Number of references**	**% of references**
Umbrella Themes				
Trust and Community Building	13	18.57	131	11.61
Mixed messages. Web 2/Web 3	3	4.29	73	6.47
Accessibility	6	8.57	51	4.52
Private Ordering	5	7.14	146	12.94
Verification and curation	6	8.57	104	9.22
Core Copyright Themes				
Copyright - Rights	14	20.00	155	13.74
Copyright – Infringement	6	8.57	124	10.99
Platform Liability	17	24.29	344	30.50
Totals	**70**		**1,128**	

[N.B. As with the previous Chapter 6 the footnotes in this Chapter reference content available on the platforms or in platform specific blogs, all (unless noted in the text) last accessed on 29 December 2024. A reference in bold identifies a document uploaded to NVivo for analysis, which refers to the *Bibliography for Case Study Data uploaded to NVivo* at **Appendix 2**].

2. Copyright – Rights

This Theme analyses how the platforms deal with copyright in relation to the minting and trading of NFTs via their marketplaces.

2.1 Language of Buying, Selling and Ownership

The language used on the platforms refers to the buying, selling and ownership of NFTs. From "In Web 3.0, your creativity is valued, and your digital objects belong to you,"[1] to, "Want it. Need it. Buy it Now. With Buy Now, you get the instant gratification of adding an NFT to your collection immediately. No competing, it's instantly yours."[2] *SuperRare*, "Collect digital art. Buy and sell NFTs from the world's top artists",[3] and *KnownOrigin*, "Discover, sell and collect NFTs".[4]

Foundation's ToS state, "Foundation provides a platform for Users [...] to sell, purchase, list for auction, make offers on, and bid on (each a "Transaction") Digital Artwork,"[5] where a "Digital Artwork" refers to a "non-fungible Ethereum-based token that uses smart contracts on the Ethereum blockchain."[6] So, clear use of the words "selling" and "purchasing" in relation to digital artworks and NFTs.

Opensea talks of an NFT being "a unique digital item stored on a blockchain", which can provide a "digital record of ownership" in addition to "authenticated ownership".[7] The language is all about buying, selling and owning, for example they give an example of "let's say you want to buy a piece of artwork [….] you can see the entire history of that piece, all the past owners, every sale, all the way back to the original creation."[8] On *OpenSea*, when it comes

[1] *Foundation*, (WorkinginContent.com) https://workingincontent.com/companies/foundation.
[2] *Foundation,* 'Connect and Collect NFTs' https://foundation.app/how-to-collect.
[3] *SuperRare* https://www/supperrare.com.
[4] *KnownOrigin* https://knownorigin.io/.
[5] **FOTS** Clause 1. What is Foundation?
[6] **FOTS** Clause 1.a) Smart-Contract Enabled.
[7] *OpenSea*, 'What is an NFT' (*OpenSea.io*, 26 August 2022) https://opensea.io/learn/what-are-nfts.
[8] ibid.

to "how to buy an NFT" there are three ways that a collector can do so, either "buy now", auctions or offers.[9] The *Opensea* Learn section includes a Q&A on, "Can't I just right-click and save or screenshot the NFT?" to which the answer is that you can but how "this doesn't make you the owner. Taking a picture of the Mona Lisa doesn't mean you own it. You could print it out and enjoy the art, but you wouldn't be able to resell it for its true value".[10]

SuperRare has a rather confusing thread in its Help Centre,[11] which discusses why, if anyone can download the art file, would you actually buy an NFT?[12] The post acknowledges that it is difficult to prevent others from "screen-shotting" or downloading an art file. However it adds that, now that digital creators have the "ability to tokenise their digital artworks as one of a kind assets that can be bought, sold and traded, with the provenance of ownership and previous sales/bids being forever recorded on the blockchain… it is the artist's intent that the original, collectible artwork is the token."[13] That is, whilst anyone can download and view the image, you can't gain any value without "owning the NFT as well".[14] From a rights granted point of view, this is confusing in that it clearly gives the collector the impression that they own the "original, collectible artwork", and also does rather presuppose an artist's original intent.

2.2 Copyright in NFTs?

Likewise, and where mentioned, the language used by the platforms supports the belief that NFTs are protected by copyright. *SuperRare*, "NFTs are protected by copyright law. Copyright law protects original authorship works, including digital works such as NFTs and CryptoArt."[15] However, most references made to copyright, aside from in the ToS, are in relation to and concern the prevention of copyminting, rather than rights transferred on "sale".

[9] *OpenSea*, 'How to buy an NFT' (*OpenSea.io*, 26 August 2022) https://opensea.io/learn/how-to-buy-nft.
[10] *OpenSea* (n 7).
[11] *SuperRare*, 'Advice and answer from the SuperRare Team' https://help.superrare.com/en/.
[12] Z. Yanger, 'If anyone can download the art file, why would I buy the NFT?' (*SuperRare.com*, undated) https://help.superrare.com/en/articles/3581021-if-anyone-can-download-the-art-file-why-would-i-buy-the-nft last accessed 29 December 2024 [no longer available].
[13] ibid.
[14] ibid.
[15] Lauren, 'Are NFTs and CryptoArt Protected by Copyright?' (*SuperRare.com*, undated) https://help.superrare.com/en/articles/7225642-are-nfts-and-crypto-art-protected-by-copyright last accessed 29 December [no longer available]

2.3 Rights Transferred on "sale"?

Turning to the small print, the situation is more opaque, with platforms adding that collectors do not own rights in the underlying artworks. But, this is well hidden, typically only referred to in the platforms' ToS, wordy and where mentioned badly written and full of "legalese". Equally, there is little advice given to creators on how to manage their IPR when minting NFTs, and very little mention of rights beyond the ToS.

OpenSea

However, there is nothing on *OpenSea*, as the market leader, that gives the impression that anything other than "ownership" occurs. For example, there is no mention of the word "licence". When you view an NFT on *OpenSea* it clearly states at the top who it is "owned" by,[16] and nowhere on either *OpenSea* or in the *OpenSea* ToS is there any advice or guidance on rights granted by an artist to a collector. *OpenSea's* ToS do refer to "NFT Terms", but at no point do they provide any guidance or give any indication that there may be any issue as to the nature of "ownership" of the NFT:

> *There may be terms and conditions that apply to the NFTs' themselves set directly between buyers, sellers, and/or creators with respect to the NFT including with respect to the use of the NFT content and rights and obligations associated with a given NFT ("NFT Terms"). For example, when you click to get more details about any of the NFTs or NFT collections visible on OpenSea or view the NFT metadata, you may notice a third-party link to NFT Terms governing the use of the NFT that you will be required to comply with. OpenSea does not set the NFT Terms and is not party to any such NFT Terms, which are solely between the buyer, seller, and/or creator. The buyer, seller, and/or creator are entirely responsible for communicating, promulgating, agreeing to, and enforcing NFT Terms. You are responsible for reviewing such NFT Terms.*[17]

(N.B. Curiously, in the previous iteration of their ToS, dated 22 August 2022, this clause referred to "Purchase Terms" rather than "NFT Terms". Interesting that there was a conscious decision to make move away from language of "purchasing".)

So, *OpenSea* maintain a very "hands off' approach, in that they leave any copyright issues to be clarified by the artist, who is also obligated to bring such terms to the attention of a collector, who in turn is expected to be "au fait" with the situation and DYOR.

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[16] 'Allie' Owned by josh63 (OpenSea.io) https://opensea.io/assets/ethereum/0xa98cc213495b178bc0aa690223325bbed2dbbc71/400.
[17] **OSTOS** Clause 5 Third-Party Content, Agreements, and Services**.**

Rarible

Rarible does mention legal rights and copyright in the Rarible Community Guidelines,[18] and outside of their ToS. These Guidelines state that creators "maintain [sic] all legal rights, including copyrights". [Should this read "retain"?] and continue, "by collecting, you own the NFT which links to the artwork on a blockchain". The guidelines go on to say, "do show off your NFTs on platform virtual spaces", but "respect copyright and IPR according to the creator's licence".[19]

So, whilst they do bring the issue of rights in the underlying artwork to the attention of both artists and collectors, the wording is confusing, and not particularly helpful or understandable for either an artist or collector to know what rights they are granting or acquiring respectively as, in particular, there is no further information or mention anywhere, either on the platform or in the ToS, of the "creator's licence".

The *Rarible* ToS then further confound the issue, by sitting on the fence, and making a real mess of the situation. They define a "Collectible" as being a creator's own content together with, once minted, the associated NFT.[20] Creators are required to separately review and agree to the "Creator Terms and Conditions", but as with the "Creator's Licence" in the Community Guidelines, no further details or information are provided. The ToS continue, "Collectibles may be subject to limitations on usage, reproduction, and/or dissemination; you are responsible for adhering to such limitations if you acquire a Collectible."[21] However, this comment is tagged on to the end of a Clause that relates to *Rarible* denying access to the service, and most would not even read the ToS, let alone understand the significance of this statement, hidden within an unconnected clause.

The TOS continue by saying that;

> *In the absence of an express legal agreement between the creator of any Collectibles and purchasers of Collectibles, there cannot be any guarantee or assurance that the purchase or holding of Collectibles confers any license to or ownership of the Collectible Metadata or other intellectual property associated with Collectibles or*

[18] *Rarible* 'Community Guidelines' https://rarible.com/community-guidelines.
[19] ibid.
[20] **RTOS** Clause 2.4, Creator Account.
[21] **RTOS** Clause 2.6, Rarible May Deny Access to or Use of the Service.

> *any other right or entitlement, notwithstanding that you may rightfully own or possess the Collectible.*[22]

So, in summary, there might be limitations on usage of the content, as evidenced by the non-existent "Creator's Licence" mentioned in the Community Guidelines. It is up to a purchaser to check any limitations, should they exist, and if such limitations are not present then there is no guarantee of any rights at all, "*notwithstanding that you may rightfully own or possess the Collectible*."

Foundation

The *Foundation* ToS are a slight improvement, in that they contain a section entitled "What are the IPR on the platform?"[23] However, an artist or collector would need to navigate to, read and understand the ToS in order to be made aware of this section, as there is no mention of the issue elsewhere on the platform.

Regarding "Creator Rights", the ToS state that the creator owns all rights to the content underlying the digital artwork (the "Art Content"), unless the creator expressly transfers any such right to a collector or third party.[24] As such, the creator has the right to reproduce, prepare derivatives of, distribute, and display or perform the Art Content.[25] The Terms continue, "the Creator hereby expressly and affirmatively grants to the Collector and, to the extent applicable, any subsequent Collector in a secondary sale a [Collector's Licence], unless the Creator expressly grants different rights to the Collector."[26] This is quite clear, the creator retains all copyright to the Art Content, unless for example they either waive or assign those rights, and failing which a licence is then granted to the collector. Whether or not this is legally valid, it does make sense.

Collector's Rights are then detailed in the next clause which starts by stating that,

> *The Collector receives a cryptographic token representing the Creator's Art Content as a piece of property, but does not own the Art Content itself or any IPR therein. The Collector may display and share the Art Content, but the Collector does not have any*

[22] **RTOS** Clause 13.1, No Responsibility for NFTs or Collectibles; No Guarantee of Uniqueness or IP.
[23] **FOTS** Clause 4, What are the IPR on the Platform?
[24] **FOTS** Clause 4.a), Creator Rights.
[25] ibid.
[26] ibid.

> *legal ownership […] or copyright in the Art Content, except the limited license to the Art Content granted by these Terms.*[27]

This extremely comprehensive, non-commercial "Collector Licence" i.e. right to display the Art Content privately or publicly, is then set out in detail in the ToS – detailing exactly what a Collector may or may not do with the Art Content.[28] However, and as per the "Creator Licence" this is only mentioned in the ToS.

SuperRare

SuperRare includes a separate section on copyright and NFTs in its Help Centre.[29] This section is a duplicate of the *SuperRare* Copyright Community Guidelines and Policies,[30] which can only be accessed from a link in the ToS.[31]

The section states how NFTs are protected by copyright, and how "ownership of a copyright is separate and distinct from ownership of any material object or digital asset – what this means is that whether it's a tangible painting or an NFT, the creator typically owns the copyright even after a sale," and "collectors only have a property interest in lawfully purchased NFTs, but they do not have a copyright interest in the underlying artworks."[32]

The section continues by adding how, "Artists do not lose copyright protection over works when they are sold on the *SuperRare* marketplace, unless the parties expressly agree in writing to convey a copyright interest as part of the transfer. As further explained in our ToS, Collectors only have a property interest in lawfully purchased NFTs, but they do not have a copyright interest in the underlying artworks. The Artist reserves all exclusive copyrights to the underlying copyrights."

Further, the Help Centre clarifies how *SuperRare* artists retain the exclusive right to make commercial use of their artworks, so are free to market, print, and license artwork underlying

[27] **FOTS** Clause 4.c) i), Collector Rights.
[28] **FOTS** Clause 4.c) ii) and Clause 4.c) v), Collector Rights.
[29] *SuperRare* Help Centre, 'Copyrights and NFTs' https://help.superrare.com/en/collections/3931119-copyrights-and-nfts.
[30] *SuperRare* Copyright Community Guidelines and Policies, https://www.notion.so/SuperRare-Copyright-Community-Guidelines-and-Policies-63a40f925a57471aabdceaf3adc0b0f5.
[31] **SRTOS.**
[32] Lauren (n 15).

minted NFTs, and as per *Foundation*, collectors only have a limited non-commercial licence to display artworks.

Within the *SuperRare* ToS there is a section on Creator NFTs, which states that all works minted on the *SuperRare* platform are subject to the *SuperRare* licence.[33] The ToS incorporate and reinforce the Copyright Community Guidelines and Policies discussed above,[34] in that they state how all exclusive copyrights are reserved by the artist, and collectors do not have any copyright to the underlying artwork, excepting the *SuperRare* licence, which by minting a work on the *SuperRare* platform the artist grants to the collector and all subsequent owners.[35] The *SuperRare* licence grants to the collector a limited licence to display the work, and whilst collectors have the right to sell, trade, transfer or use the *SuperRare* items, they may not make "commercial use" of the work.[36]

NiftyGateway

The *NiftyGateway* platform says nothing about any rights granted by an artist to a collector and the ToS say little more.[37] They do mention "additional items" i.e., items which can be sold with NFTs,[38] but make no reference to rights in the underlying artwork as such. This is compounded with the fact that the "Additional Items" do not travel with the Niftie and secondary markets, which further suggests this clause is not referring to rights.

> *Creators or Publishers may choose to provide certain rights to holders of their Nifties, which may include, but is not limited to, physical items, special access, or other exclusive content (collectively, "Additional Items"). Any Additional Items will be provided directly to you from the Creator or Publisher; NiftyGateway has no involvement in such transactions and is not a party to such transactions. Notwithstanding the above, Nifty Gateway may allow the Creator or Publisher to publish a description of the Additional Items on the Site. If you own a Nifty that entitles you to Additional Items, you hereby consent to Nifty Gateway sharing your contact information with the Creator or Publisher to facilitate delivery of your Additional Items. Unless otherwise stated, transactions on the Secondary Market are only for Nifties and do not grant the purchaser the right to any Additional Items.*

[33] **SRTOS** Clause VI.A. Ownership of Creator NFT(s).
[34] *SuperRare* Copyright Community Guidelines and Policies, https://www.notion.so/SuperRare-Copyright-Community-Guidelines-and-Policies-63a40f925a57471aabdceaf3adc0b0f5.
[35] **SRTOS** Clause VI.C. The Owner's NFT License Granted by the Creator.
[36] ibid.
[37] **NGTOS**.
[38] **NGTOS** Clause 12, Terms of Sale.

NiftyGateway, not unlike the other platforms and as discussed in greater detail below, goes to great lengths to exclude all and any liability that might arise. Of note here is the fact that *NiftyGateway,* rather boldly, states that it makes no warranty that the site will amongst other things be "legal".[39] They also add the following:

> *Nifties are intangible digital assets. They exist only by virtue of the ownership record maintained in the Ethereum network. Any transfer of title that might occur in any unique digital asset occurs on the decentralised ledger within the Ethereum platform. We do not guarantee that Nifty Gateway or any Nifty Gateway party can effect the transfer of title or right in any nifties.*[40]

KnownOrigin

Finally, *KnownOrigin* has very little on the platform in terms of rights, and since this research was carried out, the content on the platform has been reduced as they have currently suspended new artwork uploads.[41]

Other than in the ToS, the only place that copyright is mentioned in relation to rights, rather than infringement, is in a post in the "Journal" section of the platform, on "What are NFTs?"[42] This post begins by stating that an NFT is a unique digital asset that lives on the blockchain, and that the main difference between NFTs and Cryptocurrencies is that NFTs are non-fungible, and "Purchasing an NFT off [sic] KnownOrigin triggers a smart contract reaction as soon as the buyer finalises their purchase. The smart contract will then immediately transfer ownership of the art to its new owner." The post then continues by talking about power to the creator and here it gets a little muddled, as it talks of how, "most NFT projects give full ownership of digital assets to the owner. This often includes things like commercial rights and IP rights." The article goes on to give the example of a play-to-earn gaming giant Sorare where, "the complete ownership of NFTs allows players to take their Sorare cards out of the game and sell for real money on NFT marketplaces". Frustratingly, no further clarification is provided as that is where the post ends, but it does rather leave the impression that this is also their understanding regarding the position with CryptoArt i.e. that it is the "complete ownership" of NFTs that enables the collecting of NFTs.

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[39] **NGTOS** Clause 22, Disclaimers.
[40] ibid.
[41] *KnownOrigin*, Minting Art https://docs.knownorigin.io/en/articles/9951414-minting-art accessed 04 October 2024 [no longer available].
[42] *KnownOrigin,* 'What are NFTs and How do they Work' (*KnownOrigin Journal,* undated) https://knownorigin.io/journal/stories/what-are-nfts accessed 04 October 2024 [no longer available].

Turning to the ToS, they start by saying that, on *KnownOrigin,* a user can create limited-edition items, which can include, among other things, visual artwork, the "Content".[43] This clause then continues by saying that the content is owned by the artist, but linked to a token, the "Token", and the token is what the buyer owns.[44] Ownership of the token is described as being "just like owning a physical artwork, like an original painting or print".[45] It continues, "you understand that no IPR in the content on the Token are passed on to you from the Artist (including the ability to produce the Content commercially or create merchandise from the Content)".[46] Furthermore, "by downloading Content via *KnownOrigin.io* or directly from the IPFS, this does not give you any IPR in that content".[47] This is a curious choice of words, and worth noting the absence of the words "copy" or "reproduce"? There is also no mention of a licence.

IPR are then explained in a further clause,[48] which states:

> *If you buy a Token on the App:*
>
> *you do not acquire any IPR in the Content, but instead you receive ownership (or title) of the Token. You have the right to display the Token and resell it to another person if you wish;*
>
> *the original artist of the Content does not give up any copyright in the Content, meaning that you cannot prevent the original artist from using the Content for further commercial work; and*
>
> *you have no right to use the Content for commercial purposes.*

So, no mention of a licence, although they do mention the right to resell. As with *SuperRare*, they use the analogy of a tangible painting, and finally and in common with *SuperRare* and *Foundation*, a buyer cannot prevent the original artist from using the content for further commercial work. However, whether this includes minting further NFTs, as with *SuperRare* and *Foundation*, is not clear.

[43] **KOTOS** Clause 6.How you can created unique digital assets.
[44] **KOTOS** Clause 8, Ownership of the tokens.
[45] ibid.
[46] ibid.
[47] ibid.
[48] **KOTOS** Clause 10, Intellectual Property.

So, in summary, across the platforms any reference to a user not having the exclusive rights, or being granted a licence to the underlying artworks are, where mentioned, well-hidden and, for the average user, fairly incomprehensible.

2.4 Secondary Sales

A secondary sale of an NFT refers to the selling of a pre-owned NFT after its initial purchase from the creator, and users are expected and encouraged to participate in secondary markets. However, neither *OpenSea*, *NiftyGateway* or *Rarible* make any mention in their ToS of the ability of a collector to be able to lawfully sell i.e., transfer any licence to any underlying artwork associated with an NFT on a secondary marketplace.

The *Foundation* ToS do clarify how a collector has the right to sell a digital artwork,[49] and how upon any sale or transfer the "Creator Licence" will automatically transfer to the new collector.[50] Further, in terms of a secondary sale a collector is required to warrant that they will, "*(i) notify the subsequent Collector of these Terms and (ii) require the subsequent Collector to comply with these Terms"*.[51] Even if legally enforceable, this term is rather onerous and unworkable.

SuperRare does allow for the resale of NFTs, but makes heavy weather of it in their ToS. They go into great detail regarding the enforcement of royalties on secondary sales,[52] and include a peculiar clause which states how, "any royalty paid to the NFT Creator upon the resale of a Creator NFT is paid in consideration for the limited licence previously enjoyed by the Owner up until the moment of dispossession."[53] The *SuperRare* ToS continue by confirming that, as per *Foundation*, a collector is able to transfer any licence on the transfer of an NFT to a new digital wallet.[54] and finally *KnownOrigin*, as mentioned in the previous section, grants the right to a Collector to resell a "Token",[55] which excludes any IPR.[56]

[49] **FOTS** Clause 4.c) iii) Collector's Rights.
[50] **FOTS** Clause 4.c) ii) Collector's Rights.
[51] **FOTS** Clause 4.c) iv) Collectors Rights.
[52] **SRTOS** Clause V.C. Royalties**.**
[53] **SRTOS** Clause VI.C. The Owner's NFT licences Granted by the Creator.
[54] **SRTOS** Clause VI.E. Termination, Assignment and Sublicensing.
[55] **KOTOS** Clause 10, Intellectual Property.
[56] **KOTOS** Clause 8, Ownership of the Tokens.

2.5 Restrictions on Further Minting: "No Double Minting"

Whereas the *Foundation* ToS clearly state how a Creator owns all rights to the Art Content,[57] this right is subsequently limited by a clause requiring a Creator to warrant that they have not, and will not create another NFT using the same Art Content. [58] Both *Foundation* and *SuperRare* prohibit "double minting" and/or limited editions. Both state that NFTs are one-off and unique, and require an artist to warrant that they have not and will not create another NFT using the same underlying digital artwork. So, according to *Foundation* an artist, as the copyright owner, has the right to reproduce, prepare derivatives of, distribute, and display or perform the art content,[59] but warrants that they have not, and will not, create another NFT using the same art content.

SuperRare's ToS state how *SuperRare* is, "the premier place for single-edition, 1-of-1 digital art" and how, "there should never exist multiple NFTs that reference the exact Creator Content throughout the whole universe, including other blockchains."[60] As with *Foundation* creators on *SuperRare* are required to warrant that they will not mint another NFT associated with the Creator Content. [61] This is a heavy handed clause, and continues by saying how *SuperRare*, "reserves the right to enforce this rule, by any means it deems necessary and is afforded any reasonable interpretation [..] that enables it to prohibit activity that it deems against the 'spirit of the rule'".[62] It would appear that *SuperRare* is quite keen to enforce this rule, in order to preserve the uniqueness of NFTs within its market place and its reputation as an exclusive high-end marketplace.

2.6 Additional Items

It is clear that the platforms are keen to avoid any liability when it comes to additional purchase terms or agreements between users. *SuperRare* goes so far as to state that a user acknowledges that any third-party terms or items are offered on a "complementary basis" and the sale price of any transaction involving an NFT is paid solely in consideration for the NFT. [63] As discussed

[57] **FOTS** Clause 4) a) Creator Rights.
[58] ibid.
[59] ibid.
[60] **SRTOS** Clause VI.B. SuperRare in a place of only single editions.
[61] **SRTOS** Clause VII.C. No Double Minting.
[62] **SRTOS** Clause VII.D. Enforcing the No Double Minting Rule.
[63] **SRTOS** Clause V.A. "SuperRare is a P2P Marketplace that connects Buyers and Sellers".

above, *NiftyGateway* is also keen to exclude any liability for "Additional Items",[64] and *Foundation*, also makes it clear that it provides no assistance or guarantee in relation to additional "perks" in connection with a sale.[65]

2.7 Creator Licence Granted to Platforms

Finally, it is worth mentioning how users are required to licence their content to the platforms and unusually, this is an area where all the platforms are in agreement. This requirement, which is only ever mentioned in the ToS, essentially says that all content posted to a platform or associated with an NFT is licenced to the platform for "our current and future business purposes".[66] *Opensea* does moderate this by adding how they do not claim any ownership to the content, "We're not saying we own it. We're just saying that we might use it and show it off a bit".[67]

The other platforms all haves more wide-reaching and lengthy clauses. They are all very similar, and apart from *OpenSea*, also include the right for that platform to create derivative works. The *Rarible* licence, as the most concisely drafted, is included in full below:

> *By Posting User Content to or via the Service, you grant Rarible a worldwide, non-exclusive, perpetual, irrevocable, royalty-free, fully paid right and license (with the right to sublicense through multiple tiers) to host, store, transfer, display, perform, reproduce, modify for the purpose of formatting for display, create derivative works as authorized in these Terms, and distribute your User Content, in whole or in part, in any media formats and through any media channels now known or hereafter developed. All of the rights you grant in these Terms are provided on a through-to-the-audience basis, meaning the owners or operators of external services will not have any separate liability to you or any other third party for User Content Posted or otherwise used on external services via the Service.*[68]

KnownOrigin also adds the following,

> *Further, to the fullest extent permitted under applicable law, you waive your moral rights in the Content and promise not to assert such rights or any other IPR you have in the Content against us, our sublicensees or our assignees.*[69]

[64] **NGTOS** Clause 12, Terms of Sale.
[65] **FOTS** Clause 3(c) Perks.
[66] **OSTOS** Clause 7. IPR.
[67] ibid.
[68] **RTOS** Clause 7.2. Licence Grant to Rarible.
[69] **KOTOS** Clause 13**.** Content.

In summary users, artists and collectors alike, need to be aware of the powers that the platforms grant themselves in terms of user content, and how the platforms avoid all and any liability for use of the content. It is questionable as to whether at any point, and as with most of the terms in the platforms' ToS, this is actually brought to the attention of users.

2.8 Summary

We have seen from the above how there exists an overall perception of "ownership" in an NFT in its entirety, with platforms not being open or up front with both artists and collectors regarding their rights, and which if mentioned are frequently only done so in lengthy in impenetrable ToS.

All of the platforms have content on their websites and in their ToS, which users are required to navigate. There is very little consistency in terms of how the platforms deal with the issue of rights. However, all do make use of the language of "buying", "selling" and "ownership", reinforcing the perception of ownership. They provide for, and indeed expect, that the NFTs will be resold, and enforce royalty payments from secondary sales on their platform. Aside from *Foundation* and *SuperRare*, which do provide further clarification, terms are vague, and misleading regarding rights that the purchaser obtains on purchasing an NFT. Even where further clarification is provided, there also exists the question of whether such terms are in fact legal and enforceable.

The platforms go from overlooking the issue, as with *OpenSea* who mention nothing more than "purchase terms" that maybe associated with an NFT, and *NiftyGateway* who state that they have no involvement in transactions, and make no warranty that the platform is "legal", to those that provide an overly comprehensive and burdensome Collector's Licence, as in the case of *Foundation*. *Rarible* confuses the situation and ends up on the fence, stating how in the absence of any agreement between the collector and the artist there is no guarantee of any rights at all. *SuperRare,* whilst providing information and guidance to artists and collectors, imposes the most onerous and unintelligible ToS. It also, as with *OpenSea* and *KnownOrigin*, conflates NFTs with physical artworks, which gives the impression that the two are treated the same from a legal point of view. Finally, *SuperRare* and *Foundation* specifically prevent an artist from creating any further NFTs of the underlying artwork, and although this is mentioned on

the *SuperRare* platform as well as in their ToS, with *Foundation* the only reference is within their ToS.

It goes without saying that this is not an ideal situation for either artists, in terms of navigating the platforms, deciding which is best to use and how to best control and monetise digital artworks or for collectors when understanding what they are buying and what rights they have to the underlying digital artworks.

3. Copyright – Infringement

This theme moves beyond the platforms' understanding of copyright in the creation, buying and selling of NFTs to how they view and deal with unauthorised NFTs.

3.1 Presumption of Infringement.

The platforms all presume that the minting of an unauthorised NFT, using without authorisation (either in whole or part) the protected work of another is copyright infringement.

They all refer to the infringement of copyright and IPR in their ToS, and make it clear in that infringing activity will not be tolerated either on or through their platforms.[70] *Foundation*, "respects IP of others and asks users to do the same."[71] *KnownOrigin*, "you will not infringe the copyright [or other IPR] that belong to other people when you create content,"[72] and artists are required to "expressly represent and warrant"[73] that all content used is either original, or is used with authorisation. *Rarible*, "Respects the IPR of others, takes the protection of IPR very seriously and asks users [..] to do the same. Infringing activity will not be tolerated on or through the Service"[74]

The platforms prohibit not only the creation of infringing NFTs by an artist, but in addition the sale of any items that may infringe the copyright or other rights of third parties.[75] *NiftyGateway* has an all-encompassing clause which states that users agree not to, "engage in transactions

[70] **RTOS** Clause 8.1.Respect of Third Party Rights.
[71] **FOTS** Clause 4. H. Copyright Complaints.
[72] **KOTOS** Clause 7 What obligations do I have if I am an artist?
[73] **FOTS** Clause 4) a) Creator Rights**; SRTOS** Clause VII.B. Creators must only mint original, authorised and non-infringing content.
[74] **RTOS** Clause 8 IPR protection.
[75] **KOTOS** Clause 10 Intellectual Property.

involving items that infringe or violate any copyright [..] or any other proprietary right under the law," a clause which applies to "Users" of the platform so applies to creators and collectors alike. So, generally, and as above platforms make it very clear that infringing activity will not be tolerated on or through their platforms.[76]

However, beyond the ToS, platforms are relatively quiet on the subject of copyright infringement, and where they do mention it, are rather vague. *OpenSea* is the most "vocal" on the subject in their attempt to demonstrate that they are taking action against, "plagiarism, IP infringement and theft".[77] *Rarible* in its Community Guidelines simply states, "Don't mint anyone else's work (unless you've got permission)"[78] *SuperRare* has a relatively comprehensive section on how an artist can, "improve their reputation and add to the SuperRare community by following their guidelines."[79] These guidelines refer to minting only original works that the artist has legal authority to mint; how artists are required to refrain from minting stolen or infringing content or content created by other *SuperRare* artists, and if a work incorporates unoriginal content, the artist is responsible for either making sure that the content is in the public domain or that they have a valid fair use defence. [80]

But, beyond this the platforms descend into a world of euphemism, confusion and private ordering.

3.2 Copyminting

"Copyminting" is a term that is frequently used in relation to unauthorised NFTs.

Foundation uses it to describe exact copies, and for which they have a zero-tolerance policy.[81] However, they are less clear when it comes to anything other than an exact copy, so what they refer to as a "remix". Whilst they have a "great respect for remix culture and [we] tolerate works that build and substantively transform other works,"[82] they also provide an in-product

[76] **RTOS** Clause 8.1. Respect of Third Party Rights.
[77] **OS3**.
[78] *Rarible* Community Guidelines https://rarible.com/community-guidelines.
[79] *SuperRare*, 'Are NFTs and CryptoArt Protected by Copyright?' https://help.superrare.com/en/articles/7225642-are-nfts-and-crypto-art-protected-by-copyright.
[80] ibid.
[81] *Foundation*, 'Counterfeit/Remixes Policy' https://help.foundation.app/hc/en-us/articles/5658247759771-Counterfeit-Remixes-Policy.
[82] ibid.

reporting tool which encourages those affected to file a DMCA takedown notice.[83] The in-product reporting tool permits a user to report a "counterfeit artwork" to its Trust & Safety team who will review the NFT to assesses whether it is in violation of its ToS or "content policies", which appear not to exist anywhere.[84] However, there is no information on the outcome of this process, how long it takes, who makes the decision or how it is made? "While not every report results in action, we want you to know that our Trust & Safety team takes every report seriously and reviews each one at length. We believe that these reports are the best way to ensure that Foundation remains a safe and inclusive space."[85] What they imply is that they will remove exact copies, but are vague as to what action they will take beyond exact copies, although it does appear that, via their in-product reporting tool, a level of review and policing prior to a DMCA takedown notice can, and does, occur.

OpenSea with its "copymint prevention system" uses a combination of image detection technology and human review to detect copyminting. However, it defines copyminting differently to *Foundation*, in that it talks of "potential duplicates,"[86] rather than exact copies and is, "committed to finding a balance between exact copies and 'substantively additive remixes.'"[87] The *OpenSea* copymint policy states that, "We consider an NFT a 'copymint' if it was created with the intent to deceive users into thinking it's the original,"[88] before then listing eight characteristics that they take into account when considering whether an NFT may be a copymint.[89] It continues by adding, "If we believe an NFT is a copymint, users won't be able to view it and we'll work to delist collections and disable accounts with repeated copymint violations"[90] As with *Foundation*, users reserve the right to submit a DMCA notice, but clearly in addition to this *OpenSea* retains a very wide remit to police content on its site. Finally, *OpenSea* states how, "with this system, our long-term goal is two-pronged: first, with help from

[83] *Foundation*, 'Guide: Digital Millenium Copyright Act or "DMCA"' https://help.foundation.app/hc/en-us/articles/4419467336603-Guide-Digital-Millennium-Copyright-Act-or-DMCA-.
[84] *Foundation*, 'How can I report an NFT, collection or profile to Foundation?' https://help.foundation.app/hc/en-us/articles/4419474921115-How-can-I-report-an-NFT-collection-or-profile-to-Foundation.
[85] ibid.
[86] **OS3**.
[87] **OS2**.
[88] *OpenSea*, 'What is OpenSea's copymint policy?' https://support.opensea.io/en/articles/8867065-what-is-opensea-s-copymint-policy.
[89] ibid.
[90] ibid.

our community, to eliminate all existing copymints on *OpenSea*; and second, to help prevent new copymints from appearing in the first place."[91]

SuperRare makes it clear that they have no wish to get involved in disputes. *SuperRare* in its ToS requires creators to address, resolve, and settle non-DMCA infringement claims directly with the complaining party."[92] However, in its Community Guidelines *SuperRare* states that whilst they have no power to prevent an infringing work from being minted, they do have the power to take down infringing works or remove artists from *SuperRare* for repeatedly posting infringing content.[93] So, they clearly do carry out a degree of monitoring, and rely on users to notify them if they suspect a violation of the Guidelines.[94]

As a back stop, and in the case of *Foundation* and *OpenSea* in addition to in-product reporting tools, all of the platforms enable users to email the platform if they "believe that a listing on the platform infringes your IPR".[95] Beyond which, information is scant.

3.3 Summary

The platforms all assume that the minting of an unauthorised NFT may be a copyright infringement. How they define or police this issue is less clear, although they all retain the right to police, i.e. monitor the content on their platforms over and above any DMCA takedown procedure, and clearly all do whether for exact copies or not, even though they all make it clear that they have no general requirement to monitor. This confusion between the level of policing that occurs by the platform over and above a DMCA takedown notice is consistent across all the platforms, as is any transparency in decision making.

As we have seen from the Trust and Community theme discussed in the previous Chapter 6 §2, platforms want users to feel safe and confident to use their platforms. They provide in-product reporting, and encourage users to report violations. In fact they rely on users to report issues, to build the community and to create a safe and inclusive space, "keep the community safe by

[91] **OS2**.
[92] **SRTOS** clause X.A**.** IP Disputes are Between the Rights Holder and the Alleged Infringer.
[93] *SuperRare* 'SuperRare Community Guidelines' https://superrare.notion.site/SuperRare-Community-Guidelines-b9c4fc521f4344a39cac7bd13d44a56f.
[94] ibid.
[95] *KnownOrigin*, 'User Agreement' https://docs.knownorigin.io/en/articles/8731139-user-agreement accessed 27 September 2023[no longer available]

reporting content which violates these guidelines,"[96] and *SuperRare* even imposes an obligation on users to report suspicious activity.[97] However, beyond this their polices and ToS are inconsistent and lacking in transparency and accountability.

4. Platform Liability

As highlighted in the Introduction to this Chapter, with nearly a third of all of the references across all of the themes, and a quarter of the codes generated during the analysis of the Case Study Data, platform liability of significant import to the platforms. For all their promises of accessibility, community building and trust it is clear that, at the end of day, they all (and without exception) wish to absolve themselves of any liability or responsibility to users for anything at all. There is significantly less differentiation between the platforms and perhaps unsurprisingly, they all have exceptionally robust limitation of liability clauses, limiting their liability to the fullest extent permitted by law.[98]

4.1 Platforms only "Facilitate Transactions"

As "decentralised marketplaces", the platforms all claim that they only facilitate transactions, and are therefore not a party to any agreement between users, and in addition they all exclude all liability for third party sites such as Ethereum, or digital wallets such as MetaMask. *KnownOrigin*, "KnownOrigin is not involved in the actual transaction between buyers and sellers [..] We are an administrative platform that facilitates transactions between a buyer and a seller. The contract for the sale is directly between the buyer and the seller."[99] This is a position all the platforms adhere to, even though and as we have seen above, they all attempt to control and impose terms for such transactions, for example with Creator and Collector Licences, and retain the right to terminate agreements between users.

Apart from *NiftyGateway*, the platforms are all "non-custodial", meaning that they do not store NFTs on their platforms. *NiftyGateway*, as the only custodial platform, is in a slightly more awkward position in terms of control i.e., whilst the other platforms can only remove NFTs from their platforms but not from the blockchain, *NiftyGateway* can. "NiftyGateway reserves the right, in its sole discretion to confiscate any Nifties [..] and /or deem such transactions null

[96] *Rarible,* 'Community Guidelines' https://rarible.com/community-guidelines.
[97] **SRTOS** Clause V.G. Users Agree to Report Suspicious Activity.
[98] **OSTOS** Clause 13. Limitation of liability.
[99] **KOTOS** Clause 3. About KnownOrigin.io.

and void".[100] Whilst, as with all of the platforms, *NiftyGateway* claims to be purely an administrative platform facilitating transactions,[101] it does add, in a nod to its custodial status, how it "receives payments on behalf of the seller of a Nifty as a seller's agent. If you are the seller of a Nifty you appoint NiftyGateway as your agent for the limited purpose of receiving, holding and settling payments by buyers of the Nifties you sell."[102] It also acknowledges in its ToS that it has the ability to "return" NFTs to a seller. However, it adds that it has no obligation to do so, and any exceptions are made on a case-by-case basis at its "sole discretion."[103]

SuperRare holds itself out as being a non-custodial platform, but adds in the small print that none of its smart contracts are custodial without "express permission,"[104] so, clearly *SuperRare* retains some functionality to have control. *SuperRare* is in a whole different league when it comes to platform liability, as it is attempting to hide any liability behind a DAO, which is set up in the Cayman Islands, and on the face of it looks like nothing more than an attempt to avoid liability and hide profits, even though as explained by *SuperRare*, "a DAO is a Web 3.0 native way to become a user-controlled and user-owned platform".[105] The *SuperRare* platform is owned and managed by SuperRare Labs Inc. ("The Company"),[106] which is "an independent service provider to the DAO".[107] So, all primary sale commissions and marketplace fees are paid direct to the DAO, which then pays the Company to run the platform.[108] However, from the *SuperRare* ToS, it is quite clearly the Company that it is in charge.

Whilst it is true that the non-custodial platforms do not have the ability to burn i.e., send NFTs to an unusable address, they do in fact have more capability to deal with third parties, i.e. wallet providers than they suggest. *SuperRare*, "has no responsibility or technical ability to manage, modify, secure or perform transactions on behalf of your wallet."[109] Whilst this is true to an extent, there is nothing preventing the platforms from working with the wallet providers, who are able to manage transactions. *SuperRare* adds that in relation to the security of digital wallets they have no responsibility, liability or obligation to assist or remedy any breach of a

[100] **NGTOS** Clause 4. Account suspension.
[101] **NGTOS** Clause 1. Accepting these conditions.
[102] **NGTOS** Clause 12. Terms of sale.
[103] **NGTOS** Clause 15. Accidental transfers.
[104] **SRTOS** Clause IV. The protocol.
[105] **SR2**.
[106] **SRTOS** Clause I. Introduction.
[107] **SRTOS** Clause IV.E. The protocol**,**
[108] **SRTOS** Clause V.D. The SuperRare DAO.
[109] **SRTOS** Clause IV. The protocol**.**

wallet's security.[110] So, whilst they are saying that they have no obligation to do so, they also acknowledge that this is a request that may be made of them.

Whilst the platforms all talk about being decentralised, P2P marketplaces, merely facilitating transactions, they have a clear financial incentive for users to make use of their platforms. Their fee structures are complex and often opaque, as are royalties, and as discussed above in Chapter 6 §6, the more verification and curation, the higher the fee. The more expensive platforms offer more in terms of exclusivity, verification and curation, but do not stand behind any of these promises, and accept no liability for any content on their site.

The platforms offer no refunds. *OpenSea*, "you understand that you are responsible for any fees related to use of the Service, and regardless of whether a transaction is successful, such fees are final and irreversible."[111] However, they impose obligations on users to provide refunds when required, for example in relation to DMCA requests,[112] infringement complaints, [113] or in the case of *NiftyGateway* which allows users to pay with a credit card, "To the fullest extent provided by law, we reserve the right to recover funds associated with chargebacks from you."[114]

4.2 No Requirement to Monitor Content

The platforms are all keen to exclude any liability for monitoring content, but all retain the absolute right to do so, generally at their "sole discretion" with no transparency or accountability for any decision taken. *Foundation* states how under no circumstances will they be liable for any digital artwork, and how they do not "pre-screen" content, but how they do have, "the right (but not the obligation) in their sole discretion to refuse or remove any content".[115] It is interesting that they avoid use of the word "monitor". A further example of this is found in the *SuperRare* ToS which refer to how, "the Company reserves the right to Index and make accessible NFTs".[116] No liability is taken for content or monitoring in any of the ToS, even though users are often reassured that all content is verified and curated so they

[110] **SRTOS** Clause II.B. Your wallet is your sole responsibility.
[111] **OSTOS** Clause 12. Assumption of Risk.
[112] **FOTS** Clause K. User agrees to cooperate with Foundation.
[113] **SRTOS** Clause X.K. Infringers may be liable to Collectors.
[114] *NiftyGateway*, 'Nifty Publisher Agreement' https://www.niftygateway.com/publisher-terms-of-service/ Clause 7. Support.
[115] **FOTS** Clause 4) f) Third Party Content.
[116] **SRTOS** Clause VI. Creator NFTs.

need not worry. *SuperRare* even states, "Collectors should (and can!) be confident that every item on the *SuperRare* marketplace is an original and lawfully minted creation that does not infringe on the intellectual property rights of others."[117] *NiftyGateway*, "Avoid scams – Collections on our page are either curated or verified by our team, so you don't have to worry about buying a scam project."[118]

They all state in their ToS that they take issues of IPR seriously, but put the onus and liability on individual users to monitor and report content, DYOR and resolve disputes.

> *OpenSea is not party to any agreement between any users. You bear full responsibility for verifying the identity, legitimacy, and authenticity of NFTs that you purchase from third-party sellers using the Service and we make no claims, guarantees, or recommendations about the identity, legitimacy, functionality, or authenticity of users or NFTs (and any content associated with such NFTs) visible on the Service.*[119]

4.3 User Liability

This brings us on to how users are all expected to do their own research. *OpenSea,* "you bear responsibility for verifying the legitimacy, authenticity and legality of NFTs that you purchase from third-party sellers"[120] and, "you represent and warrant that you have done sufficient research before making any decisions to sell, obtain, transfer, or otherwise interact with any NFTs".[121] Users warrant that they have the requisite knowledge and technical know-how, but information is not made easily accessible to them and even *OpenSea* admits that "consumers" are expected to have the knowledge, but that none of the platforms has the right tools in place to help them navigate the NFT ecosystem.[122] *Rarible*, "You are knowledgeable, experienced, and sophisticated in using and evaluating blockchain and related technologies and assets, including Rarible-Supported Blockchains, NFTs, Collectibles and "smart contracts" (bytecode deployed to a blockchain)".[123] This seems like quite a big ask of the average "consumer", as does *SuperRare's* statement, "you agree that you have had the full opportunity to review the Protocol smart contracts and all related functions, permissions, and information".[124]

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[117] *SuperRare*, 'Are NFTs and CryptoArt Protected by Copyright?' https://help.superrare.com/en/articles/7225642-are-nfts-and-crypto-art-protected-by-copyright.
[118] *NiftyGateway*, 'An explanation of Nifty Gateway's Custody Solution' https://help.niftygateway.com/hc/en-us/articles/4409003713299-An-Explanation-of-Nifty-Gateway-s-Custody-Solution.
[119] **OSTOS** Clause 1. Introduction.
[120] **OSTOS** Clause 5. Third-party Content, Agreements and Services**.**
[121] **OSTOS** Clause 12. Assumption of Risk.
[122] **OS1**.
[123] **RTOS** Clause 2.5 [c].
[124] **SRTOS** Clause IV.G.

In terms of user liability, users use the platforms and collect or mint NFTs entirely at their sole risk, with use of the platforms provided on an "as is" and "as available" basis.[125] There is pressure from the platforms for the community to adhere to community guidelines and "behave". *KnownOrigin*, "You must adhere to copyright, originality and KnownOrigin's terms and conditions when minting. Reputation is king in this space, so we ask those involved to respect other artists and collectors in these regards."[126] The platforms all require users to not infringe the IPR of others, and to warrant that all content is original or authorised.[127] *SuperRare*, in its community guidelines, requires users to, among other things, respect IPR, monitor content, keep the market place fair and report user behaviour that violates the guidelines or impacts the community.[128] However, they go further in their ToS, by making it an obligation on a user to report any suspected violations of the ToS by others.[129] Equally, *SuperRare* has a single-edition policy that it requires its creators to adhere to,[130] adding that, "the Creator intends that the Company and Owners of the Creator's NFTs be third-party beneficiaries, [..] capable of pursuing any claim to enforce the Creator's promise not to mint duplicate NFTs and seeking appropriate remedies from the Creator",[131] before finally stating that, "The Company reserves the right to enforce this Section by any means it deems necessary and is afforded any reasonable interpretation of this section that enables it to prohibit activity that it deems against the "spirit of the rule," as determined in its sole discretion".[132] Finally, all of the ToS include indemnity clauses such as found on *OpenSea*, "By agreeing to these Terms and accessing the Service, you agree, to the fullest extent permitted by applicable law, to indemnify, defend, and hold harmless OpenSea [..] from all and any claims."[133]

In terms of user disputes, the platforms rely on and require individuals to resolve disputes. *Foundation*, "We do not get involved with User disputes".[134] However, *Foundation* does clarify this slightly saying how it does, "reserve the right, but has no obligation, to become

[125] **FOTS** Clause 7. b) disclaimer of warranties**.**
[126] *KnownOrigin*, 'Minting Art' https://docs.knownorigin.io/en/articles/9951414-minting-art accessed 04 October 2024 [no longer available].
[127] **FOTS** Clause 3. a) Restrictions **.**
[128] *SuperRare* 'SuperRare Community Guidelines' https://superrare.notion.site/SuperRare-Community-Guidelines-b9c4fc521f4344a39cac7bd13d44a56f.
[129] **SRTOS** Clause V. G. Users Agree to Report Suspicious Activity.
[130] **SRTOS** Clause VII.B.
[131] **SRTOS** Clause VII.C.
[132] **SRTOS** Clause VII.D.
[133] **OSTOS** Clause 10. Indemnifications.
[134] **FOTS** Clause 9. We do not get involved with User disputes.

involved in any way with disputes."[135] *NiftyGateway* requires users to resolve any disputes within five days, in addition to providing public contact information in order for a buyer to be able to make contact.[136] And *SuperRare*, "the Company requires Creators to address and resolve disputes directly" together with consenting in advance to the release of their email address to parties.[137]

4.4 Class Actions, Arbitration and DMCA Takedown Notices

All of the platforms (with the exception of *KnownOrigin* which is based in the UK) exclude class actions in their ToS and impose onerous arbitration clauses on users. In terms of infringement, all (again except *KnownOrigin*) comply with DMCA notices. However, and as discussed above in the Copyright Infringement Theme at §2.2, beyond a DMCA takedown request the response of a platform to a disputed or unauthorised NFT varies in terms of what that platform considers to be permitted or a "copymint", and the actions that they may choose to take to either verify or remove unauthorised NFTs. *OpenSea* will, "take down works in response to DMCA takedown notices and/or other intellectual property infringement claims and will terminate a user's access to the Service if the user is determined to be a repeat infringer."[138] Their processes lack transparency and accountability, and with the onus very much on the users to monitor content and resolve any disputes. *Foundation*, "before sending us a takedown notice, reach out to the creator directly to see if the issue can be resolved amicably".[139]

4.5 Privacy

Another issue which occurs is user privacy. Web 3.0 decentralised platforms trade on the belief of P2P and "anonymous" identity. However, in many cases users are required to register with a platform, particularly where a level of verification is required, and in the case of *NiftyGateway*, as a custodial platform, before using the marketplace users are required to set up and link a credit card to an account, which requires a name and email address. Equally, privacy issues arise with user disputes, where users are required to consent in advance to the release of their contact details. DMCA notices raise privacy issues as the platforms require

[135] **FOTS** Clause 9. We do not get involved with User disputes.
[136] **NGTOS** Clause 7. Support.
[137] **SRTOS** Clause X.A. IP Disputes.
[138] **OSTOS** Clause 7. IPR.
[139] *Foundation*, 'Guide: Digital Millennium Copyright Act or "DMCA"' https://help.foundation.app/hc/en-us/articles/4419467336603-Guide-Digital-Millennium-Copyright-Act-or-DMCA.

parties to exchange contact details. Arguably, this requirement is beyond the control of the platforms, as is required by the DMCA, but *SuperRare* goes over and above this by stating that the company may publish all details of infringement complaints and how, "Creators expressly waive any expectation of privacy relating to allegations of infringement made against them and consent in advance to the public disclosure of infringement complaints made against them."[140]

4.6 Summary

The summary is that on the face of it there is zero protection for either the creator or the collector. The position for collectors is *caveat emptor*, and for all users there is no comfort or guarantee of any support from a platform should something go awry. Whilst the platforms may hold themselves out and give the impression of being user friendly, approachable and supportive of the community, this is not reflected in the small print. Again, this is an area of the law that requires clarification as, in the platform's defence, they are perhaps only following advice, in that until clarification of the legal position exists, they need to limit their liability to the fullest extent possible, and which is in fact what they all do.

In the meantime, the question does need to be raised as to whether some of these rather onerous terms are reasonable or even legal, and if so whether they have been brought to the sufficient attention of the user in order for them to become enforceable? This is especially the case when the ToS are clearly at odds with the message presented on the platforms, for example with issues surrounding ownership, verification and curation.

5. Conclusion

NFTs are a new vehicle for trading digital artworks, with platforms keen to capitalise on the technology and the potential that it clearly provides. The purpose of this Chapter has been to analyse how they attempt to marry their public offerings in practice with an uncertain legal landscape. The platforms all give the impression that NFTs can be bought and re-sold in their entirety, with any position to the contrary well hidden. Equally, they all give the impression that if a creator believes their copyright to be infringed via the minting of an unauthorised NFT, that creator can, with the support of the platform, protect their work against infringement.

[140] **SRTOS** Clause X.H.

Copyright law in relation to NFTs is currently uncertain, with NFTs occupying a grey area between a tangible painting and an intangible digital artwork. Until NFTs occupy a more certain position within copyright law, NFT platforms will remain in the invidious position of promoting a service to their users which is not entirely backed up by or supported by the law. This explains why their ToS are so at odds with their public offerings, and why they are so keen to limit their liability to the extent that they do.

The following Part IV of this thesis analyses how copyright law can and should be interpreted to accommodate NFTs. It mirrors the Core Copyright Themes highlighted from the literature and from the analysis of the case study data; i.e., rights, infringement and platform liability. Each of these areas will be covered in separate chapters in the proceeding Part IV. Chapter 8 covers Rights in CryptoArt NFTs, Chapter 9 then discusses whether the minting of an unauthorised NFT is copyright infringement and finally Chapter 10 turns to the liability of the NFT platforms for the unauthorised actions of their users. It is only through clarifying the position of NFTs within copyright law that we will see consistency amongst the platforms in relation to rights, and greater protection for artists and collectors alike. This will allow the platforms to operate with certainty, and for the technology to flourish and reach its potential.

Part IV – How Can Copyright Law Evolve?

Part III discussed how NFT platforms approach copyright in practice, and this Part IV analyses the issues from the perspective of the law, discussing how the law has yet to catch up with the reality of the practice, and how we can interpret the law to bridge the gap between the approach taken by the platforms and the current position in law. Starting with rights in CryptoArt in Chapter 8, Chapter 9 then discusses whether the minting of an unauthorised NFT is infringement, and Chapter 10 finishes with platform liability.

Chapter 8: Rights in CryptoArt NFTs: The Problem of Digital Exhaustion

1. Introduction

This Chapter recommends how the law can and should be interpreted so that CryptoArt can be bought and sold in the same way as a physical painting; meaning that artists and collectors alike are not only able to create, sell and collect CryptoArt in a manner equivalent to a physical painting, but in a way that is legally equivalent and certain. Such as position would reflect the position in practice and clarify the problematic and current limitations of copyright law to the existing scenario.

As highlighted in this thesis ownership rights, i.e. personal property rights are distinct from, and take precedence to copyright (Chapter 3 § 2.2, 3.2 and 3.4). Now considered to be property CryptoArt NFTs are therefore subject to personal property rights and capable of transfer of ownership. However, as also noted (Chapter 3 §6.2) property law recognises two distinct categories of personal property rights, things in possession (tangible things) and rights relating to things in action (so intangible things); but the nature of CryptoAssets as property is not clear, i.e., whether they are tangible or intangible. Crucially, copyright applies different rules to an artwork incorporated in a physical, so tangible painting to a purely digital intangible artwork. Until we have a clarification in the law, it is necessary to consider the copyright position of both scenarios in order to consider the position of CryptoArt which may be considered tangible or intangible, and with protected underlying works either linked to or incorporated within the NFT.

The doctrine of exhaustion has created challenges for the exploitation of purely digital works. Online, and unless accompanied by a valid copyright assignment, a digital work can only be exploited by way of a licence rather than a sale, making consumers licensees rather than owners of the digital works that they pay for, unable to dispose of or resell their "purchases" as they wish. Although many in the US and the EU have argued for a right of digital ownership,[1] the courts in both jurisdictions have, for the time being, closed the door on extending exhaustion to digital works.[2] So, if CryptoAssets are classified as intangible, then the legality of secondary sales on CryptoArt NFTs overall is questioned as, as this Chapter will demonstrate, digital goods can according to current copyright law only be exploited via licence, so any underlying protected work associated with a CryptoArt NFT could only by default be exploited by licence. Equally, even if CryptoArt is considered to be tangible and incorporating the protected work then, as with a physical painting, from a copyright point of view this only entitles a subsequent user to distribute, i.e., resell that NFT, but does not permit any other use, so for example reproduction. As is the theme of this thesis, CryptoAssets do not fit comfortably within either of these categorisations, or within existing property and copyright law.

It is the argument of this thesis that in order to legalise the trading of CryptoArt NFTs, CryptoAssets need to be classified as *tangible* so as to permit the distribution of the underlying copyright in a CryptoArt NFT, and with such underlying art considered as incorporated within the NFT. The purpose of this Chapter is therefore to provide context, analysis and support for that argument. It analyses the existing law and argues how the law may be interpreted to consider CryptoAssets as tangible, providing background to the legal arguments, detailing how copyright law has historically struggled with the online exploitation of intangible digital goods and digital exhaustion, and analyses how courts in both the US and the UK have to date interpreted the law in this area.

Empirical analysis from Part III demonstrates how the language used by the platforms is that of buying, selling and owning NFTs, (Chapter 7 §2.1) and how NFTs are, as a whole, protected

[1] A. Perzanowski & J. Schultz, *The End of Ownership* (MIT Press, 2016), C. Sganga, 'Digital Exhaustion After Tom Kabinet' in T.E. Synodinou et al. (eds). *EU Internet Law in the DSM* (Springer 2021); J.L. Durham, 'Creating True Digital Ownership with the FSD' (2022) 23(3) Wake Forest Intell.Prop.L.J. 136; J.A.T. Fairfield, 'Tokenised: The law of NFTs and Unique Digital Property' (2022) 97 Ind LJ 1261.
[2] *Capitol Records, LLC v. ReDigi Inc*., 934 F. Supp. 2d 640 (SDNY 2013) 910 F.3d 649 (2d Cir. 2018); Case C-263/18 *Tom Kabinet*, EU:C:2019:1111.

by copyright (Chapter 7 §2.2). The impression given is that collectors own any NFTs that they pay for money for and have exclusive rights to the underlying artwork. There exists the overall perception of ownership of an NFT in its entirety, with platforms either ignoring the issue of copyright or, if mentioned, only done so in relation to infringement or in lengthy and impenetrable Terms of Service (ToS). Platforms provide for, encourage and indeed expect, that NFTs will be resold, and enforce royalty payments from secondary sales. Beyond this position, in practice the situation is confusing, with little guidance given to the user, and a lack of consistency. Terms are vague, incomprehensible and often misleading regarding rights that a user obtains on purchasing an NFT. Any references to a user not having the exclusive rights, or being granted a licence to the underlying artworks are, where mentioned, well-hidden and, for the average user, fairly incomprehensible (Chapter 7 § 2.3). Even when further clarification is provided there also exists the question of whether such terms are sufficiently brought to the attention of users, or are in fact legal and enforceable. For example, you cannot successfully contract around existing fundamental concepts of property and copyright law by permitting secondary sales of purely digital goods. In conclusion the empirical research demonstrates that that the platforms are essentially ignoring and overlooking the issue of rights. They inherently treat NFTs as tangible property, allowing users to create, collect and resell CryptoArt NFTs. However, as this Chapter will demonstrate, the law is yet to catch up with this position.

This thesis does not argue that NFTs are a panacea to the overall issue of digital ownership, but how, given their unique characteristics, it is possible (and without legislative change) to distinguish NTFs within the law and argue that the doctrine of exhaustion can, and should, apply to NFTs, thereby allowing for the trading of CryptoArt NFTs in a manner legally equivalent to their in real life (IRL) counterparts, and reflecting the reality of the NFT platforms.

Beginning with an analysis of the doctrine of exhaustion, this Chapter discusses how there currently exists no digital exhaustion in either the US or the EU, outlining the current law in both jurisdictions. It then discusses how this position relates to NFTs, and how the law can be interpreted in order to adapt to the changing technological environment.

2. What is the Doctrine of Exhaustion and Why Does it Exist?

In intellectual property (IP), exhaustion is the principle that, when an embodiment of a work protected by intellectual property rights (IPR) passes from a rightsholder to a user, the rightsholder's power over that particular embodiment is diminished.[3] With copyright this principle is reflected in a rightsholder's exclusive right to distribute copies, which is exhausted when a rightsholder consents to the sale or transfer of ownership of a protected work.[4] The rightsholder must accept that copies, or the originals, of works, lawfully placed into circulation by or with their authorisation, through sale or in any other form of transfer of ownership, can subsequently be distributed by the subsequent lawful owner of those copies or originals, if the rightsholder received proper remuneration for the initial distribution.[5] However, a rightsholders exclusive reproduction right is not exhausted meaning that, even though a lawful owner may resell a work, they may not reproduce it.

In seeking to secure a balance between the divergent interests of society the doctrine of exhaustion is based on three primary policy objectives: the superiority of property rights over copyright, the reward theory i.e., fair reward for the initial distribution and the restraint of rightsholders over the control of secondary markets.[6]

First established in the US in 1908, the Supreme Court in *Bobbs-Merrill Co. v. Straus*,[7] held that a publisher could not impose a limitation on the price at which future retailers could sell that publisher's books, stating that, "one who has sold a copyrighted article, without restriction, has parted with all right to control the sale of it."[8] Known in the US as the First Sale Doctrine (FSD) the principle has since been codified. 17 USC §106 provides rightsholders with several exclusive rights over their protected works, including the right to reproduce and distribute copies. The distribution right gives a rightsholder the exclusive right to distribute copies of a work to the public by sale or transfer of ownership or by rental, lease or lending,[9] with copies defined as the *material* object in which the work is first fixed.[10] However, 17 USC §109(a)

[3] A. Perzanowski & J. Schultz, 'Digital Exhaustion' (2011) 58 UCLA L.Rev. 889, 891.
[4] Directive 2001/29/EC of the EP and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society ("InfoSoc Directive") Art 4(2).
[5] P. Mezei, *Copyright Exhaustion: Law and Policy in the US and the EU* (2nd edn, CUP 2022) 2.
[6] P. Mezei (n 5) 13, Opinion of AG Szpunar in *Tom Kabinet,*C-263/18, EU:C:2019:697 1-3.
[7] *Bobbs-Merrill Co. v. Straus*, 210 U.S. 339 (1908).
[8] ibid 350.
[9] 17 USC §106(3).
[10] 17 USC §101.

imposes a significant limitation to the distribution right in that, notwithstanding the exclusive distribution right, the subsequent owner of a lawfully made copy is entitled, without the authority of the rightsholder, to sell or otherwise dispose of the possession of that copy.

In the EU, the principle is known as the doctrine of exhaustion and is found in Art 4(2) InfoSoc Directive.[11] Art 4(1) InfoSoc grants authors, in respect of the original of their works or of copies thereof, the exclusive right to authorise or prohibit any form of distribution to the public by sale or otherwise. Art 4(2) InfoSoc adds that such right shall not be exhausted within the Community in respect of the original or copies of the work, except where the first sale or other transfer of ownership in the Community of that object is made by the rightsholder or with his consent. Recital 28 InfoSoc adds how copyright protection under InfoSoc includes the exclusive right to control distribution of the work incorporated in a *tangible* article.

So, in both jurisdictions there is an emphasis on the sale or transfer of ownership of a work, together with the qualification of exhaustion only applying to either "material" copies, as in the US, or "tangible" copies in the EU, as opposed to digital i.e., intangible works. These criteria reflect the jurisdictions' commitments as signatories to the WCT. Art 6(2) WCT provides the first international reference to exhaustion, stating how "nothing in this Treaty shall affect the freedom of Contracting Parties to determine the conditions, if any, under which the exhaustion of the right [of distribution] applies after the first sale or other transfer of ownership of the original or a copy of the work with the authorisation of the author." In addition, an agreed statement concerning Arts 6 and 7 WCT limits the scope of distribution and its exhaustion to "fixed copies that can be put into circulation as tangible objects."[12]

This Chapter refers to the applicability of the exhaustion principle using both descriptors i.e., the FSD (US) and the doctrine of exhaustion (EU/UK). Equally, the terms "material" and "tangible" are used interchangeably. Broadly speaking, the treatment of the doctrine is analogous across the jurisdictions, with the fundamental objective being to establish a balance between the exclusive rights of the rightsholder on the one hand, and the ownership interests of the lawful acquirer of a protected work on the other.[13] Whilst this Chapter focuses primarily

[11] InfoSoc Art 4(2).
[12] Agreed Statements concerning the WIPO Copyright Treaty1996, Concerning Articles 6 and 7.
[13] P. Mezei (n 5) 4

on recent legal developments in the EU and UK, it also draws on the development of the FSD in the US, and current discussions in the US.

3. What is the Problem? No Digital Exhaustion

Within copyright law there exists no principle of digital exhaustion, meaning that the doctrine of exhaustion has faced challenges with the advent of digital technology,[14] with the main challenge being whether retailers and end users can resell digital files lawfully "sold" via online platforms.[15] This is because the law has developed on the basis that there exists no effective way to transfer ownership of a protected file from one party to another, whilst ensuring that the original is deleted, i.e., ensuring that the file itself is actually transferred, rather than reproduced.[16] Courts in both the US and the EU have held that the concept of digital exhaustion cannot apply, since digital transmissions require the reproduction of a file, and any resale would therefore infringe upon a rightsholder's exclusive reproduction right.[17] Equally digital files, as pure information, are considered to have no material form,[18] i.e. they are intangible, thereby excluding them (as per the legislation) from the reach of the principle of exhaustion.

> *"A digital file has no material form and therefore does not constitute an asset within the meaning of civil law. A file may, rather, be assimilated to pure information. That information may be protected by different rights, but not by the right of property."*[19]

The two main legal impediments to digital exhaustion can therefore be summarised as being: (1) the inability to sell i.e. transfer ownership of a particular copy, and relatedly the ability of the seller to retain the original copy (2) the requirement that the file be tangible or physical.[20]

Consequently, rules that have developed in the digital environment have focused on licences rather than sales of digital goods. This has enabled the larger companies, such as Amazon and Spotify, to leverage greater control over users, not only over pricing and availability of works but, also over the uses that users can make with their purchases.[21] And, despite many arguing

[14] ibid 9.
[15] Ibid 5.
[16] S. Reynolds, 'First Mover Asia: NFTs Have a 'Digital First Sale' Problem' (*Coindesk.com*, 1 March 2023) https://www.coindesk.com/markets/2023/03/01/first-mover-asia-nfts-have-a-digital-first-sale-problem/.
[17] J.L. Durham (n 1) 143; *Capitol Records* (n 2); *Tom Kabinet* (n 2).
[18] Opinion of AG Szpunar in *Tom Kabinet* (n 6) 69.
[19] ibid 43.
[20] P. Shaverdian, 'Blockchain-based Digital Assets and the case for revisiting Copyright's FSD' (*UCLA L.*Rev *Law Meets World*, 19 Feb 2019) https://www.uclalawreview.org/blockchain-based-digital-assets-and-the-case-for-revisiting-copyrights-first-sale-doctrine-2/.
[21] J.A.T. Fairfield (n 1) 1266; A. Perzanowski & J. Schultz, (n 3) 891.

for a digital doctrine of exhaustion,[22] both the US and the EU have to date resisted calls to extend the doctrine to digital works.[23]

4. Current US Position on Digital Exhaustion

In 2001 the USCO advised against the expansion of 17 USC §109 to include a digital FSD as they did not find the analogy of digital transmissions to transfers of material objects compelling.[24] Digital copies do not degrade over time, unlike material objects, and the transfer of digital content from one person to another is much easier, because "time, space, effort and cost no longer act as barriers to the movement of copies".[25] They added that voluntary deletion, or automatic deletion schemes were "unworkable" due to the possibility of cheating. At the time "forward-and-delete" technology did not exist, [26] and, even if such technology was developed in the future, it would have to be, "robust, persistent and fairly easy to use".[27]

The USCO indicated how there were too many differences between online digital transmissions and transfers of material objects to allow for a digital FSD. One significant difference, in addition to the fact that digital files do not degrade over time, being the increased risk of piracy of digital content.[28] However, they did add how, "A lawfully made and owned copy of a work on a removable storage medium can easily be transferred by physical transfer of the item, and that activity is within the current reach of 17 USC 17 §109."[29]

They recommended no changes to the FSD, advocating a "wait and see" approach.[30] A 2016 presidential task force revisited the issue, concluding that the approach was still valid because, "the technology to effectively prevent the retention of copies after a transmission has not yet become a practical reality."[31]

[22] A. Perzanowski & J. Schultz (n 1), C. Sganga (n 1), J.L Durham (n 1), P. Mezei, (n 5) 5.
[23] P. Mezei (n 5) 106.
[24] USCO, *A Report of the Register of Copyrights Pursuant to § 104 of the DMCA* (Report 97, 2001).
[25] ibid 82.
[26] ibid 97-98.
[27] ibid 98.
[28] ibid 99.
[29] ibid 100.
[30] ibid 101.
[31] US Internet Policy Task Force, *White Paper on Remixes, First Sale, and Statutory Damages 66* (2016).

The leading case in the US is *Capitol Records, LLC v ReDigi Inc*,[32] which in 2018 held that the FSD did not allow users to resell their preowned digital music files.[33] *ReDigi* operated "the world's first and only online marketplace for digital used music."[34] After downloading *ReDigi's* software, users could upload songs that they wished to sell.[35] The software then prompted them to delete the copy on their computer, and once uploaded and deleted, they no longer had access to the file, and another user was able to purchase the song and download it to their computer.[36] However, the copies were not deleted automatically, and neither could the software, "detect copies stored in other locations."[37] The District Court held that *ReDigi* infringed both the reproduction and distribution rights of the rightsholder. Reproduction occurred on the uploading of the files, and it was held that the FSD did not apply as the sale of a song required "producing a new phonorecord on the ReDigi server."[38] It was therefore impossible for the owner of a particular phonorecord to rely on the FSD as they uploaded a reproduction, and it was "simply impossible that the same material object could be transferred over the internet." [39]

On appeal *ReDigi* argued that its system effectuated the transfer of a particular file, and that it should not be deemed to have reproduced the file.[40] *ReDigi* further argued that the digital files should be considered "material objects" and therefore be eligible for protection under §109(a).[41] However, the Second Circuit affirmed the holding of unlawful reproduction.[42] It agreed that a reproduction had occurred because the song was fixed in a new material object, but this finding meant that it did not rule on whether digital files (independent of any physical storage device in which the file is fixed) could be considered "material objects", eligible for FSD protection.[43]

[32] *Capitol Records* (n 2).
[33] ibid 648.
[34] ibid 645.
[35] ibid 645.
[36] ibid 645-6.
[37] ibid 645.
[38] ibid 655.
[39] ibid 649.
[40] ibid 656.
[41] ibid 656.
[42] ibid 656.
[43] ibid 656.

In conclusion, the court ruled out the application of the FSD in the digital domain as long as it necessitates any (interim) reproduction,[44] i.e. the circumstances of lawful resale are limited to the transfer of the data carrier that embodies the actual digital file.[45] However, the Second Circuit did add how, "[O]ther technology may exist or be developed that could lawfully effectuate a digital first sale,"[46] thereby leaving the door open for a digital FSD.[47]

5. Concept and Scope of Distribution within the EU

InfoSoc implements the EU's obligations under the WCT,[48] with Art 4 InfoSoc providing authors with the exclusive right to authorise or prohibit any form of distribution of their works to the public, by sale or otherwise.[49] However, given a lack of further provision, it is necessary to refer for guidance to the WCT.[50] Art 6(1) WCT defines the right of distribution as the exclusive right of authorising the making available to the public of the original and copies of a work through sale *or other transfer of ownership*. Hence the right under Art 4(1) InfoSoc (and Art 4(1)(c) Software Directive which refers to distribution in relation to software) should be intended as encompassing forms of distribution which entail a transfer of ownership.[51]

As highlighted above in §2 of this Chapter, Art 6(2) WCT permits signatories to determine the conditions under which exhaustion of the distribution right applies after the first sale or other transfer of ownership of the original or a copy of the work with the authorisation of the author, with the scope of distribution and its exhaustion limited to "fixed copies that can be put into circulation as tangible objects."[52] This confirms that in the context of the right of distribution, the expressions "copies" and "original and copies" refer to fixed copies that may be put into circulation as tangible objects,[53] seemingly excluding works in digital format, i.e. intangible objects.

InfoSoc copied Art 6(2) WCT into Art 4(2) InfoSoc, adding at Recital 28 how "copyright protection under this directive includes the exclusive right to control distribution of the work

[44] P. Mezei (n 5) 126.
[45] *Capitol Records* (n 2) 656.
[46] ibid 659.
[47] P. Mezei (n 5) 127.
[48] InfoSoc Recital 15.
[49] InfoSoc Art 4(1)
[50] Case C-456/06 *Peek & Cloppenburg*, EU:C:2008:232, 29.
[51] ibid 29-33.
[52] Agreed Statements concerning the WCT (n 12).
[53] ibid.

incorporated in a tangible article," so linking the distribution right (and consequently exhaustion) within Article 4 InfoSoc to the distribution of the work incorporated in a *tangible* article.

Recital 29 InfoSoc continues by excluding the right of communication to the public from the scope of the principle of exhaustion, by stating, "the question of exhaustion does not arise in the case of services and on-line services in particular." In relation to this recital, the EU Commission has noted how, "a large consensus exists that no exhaustion of rights occurs in respect of works and other subject matter exploited on-line, as this qualifies as a service,"[54] and the CJEU has been careful to draw a distinction between those exclusive rights subject to exhaustion and those not.[55]

In conclusion, within the EU, the right of distribution (and therefore exhaustion) requires a *transfer of ownership* and only applies to *fixed copies that may be put into circulation as tangible objects*. Digital works are considered to be "intangible," with exploitation online a communication to the public rather than a distribution, and within InfoSoc there is no exhaustion with communication to the public.[56]

6. CJEU and Digital Exhaustion

The CJEU has adopted a strict literal interpretation to the tangible-intangible dichotomy on which the WCT and InfoSoc are founded.[57] However, both were drafted at the beginning of the "digital revolution" and are, as argued by Sganga, now outdated in terms of technological developments, with their implications in terms of digital ownership at the time far from understood.[58]

UsedSoft in 2011 was the first major case to shed light on digital exhaustion, and in which the CJEU attempted to shift this balance, acknowledging the existence of digital exhaustion in relation to the Software Directive,[59] before then reverting to a literal interpretation of the law

[54] EC (1996) Communication from the Commission, *Follow-up to Green paper on Copyright and related rights in the information society* (Brussels, 20 November 1996) 18.
[55] E. Rosati, *Copyright and the CJEU* (2nd edn, OUP 2023) 201; Case C158/86 *Warner Brothers & Metronome Video*, EU:C:2988:242; Case C-395/87 *Tournier*, EU:C:1989:319.
[56] InfoSoc Art 3(3).
[57] P. Mezei, (n 5) 27.
[58] C. Sganga (n 1) 143.
[59] Case C-128/11 *UsedSoft GmbH v Oracle International Corp*, EU:C:2012:407.

in 2018 with *Tom Kabinet*,[60] in which it appears to have excluded the admissibility of digital exhaustion under Art 4(2) InfoSoc.

6.1 Digital Exhaustion under the Software Directive - *UsedSoft*[61]

The exclusive right of distribution is also found in the Software Directive.[62] Substantially similar to the exclusive right of distribution found in Art 4 InfoSoc, Art 4(1)(c) Software Directive grants a rightsholder in a computer program the exclusive right to authorise, "any form of distribution to the public, including the rental, of the original computer program or of copies thereof," and Art 4(2) Software Directive continues by stating that the first sale of a copy of the program by the rightsholder or with their consent shall exhaust the distribution right of that copy.

In *UsedSoft*[63] the question was whether the right of distribution of a copy of computer software under Art 4(2) Software Directive was exhausted by the transfer via download of a digital copy of a program for an unlimited time, in exchange for a fee corresponding to the economic value of that copy, even if the related contract was framed as a licence and not as a sale. A referral to the CJEU sought clarification regarding the conditions required for the authorised downloading of a computer program to give rise to exhaustion of the right of distribution of that copy under Art 4(2) Software Directive.

The CJEU held that such conditions are met if the contractual relationship could be regarded as a "first sale,"[64] with a "sale" being an "agreement by which a person, in return for payment, transfers to another person his rights of ownership in an item of tangible or intangible property belonging to them."[65] The CJEU held that even a licence agreement, as was the case here, may be regarded as a sale for Art 4(2) Software Directive.[66]

The CJEU therefore introduced a functional definition of the notion of sale and requalified the licencing scheme as a sale in light of its characteristics (permanent transfer, fee corresponding

[60] *Tom Kabinet* (n 2).
[61] *UsedSoft* (n 59).
[62] Software Directive 2009/24/EC.
[63] *UsedSoft* (n 59).
[64] E. Rosati (n 55); *UsedSoft* (n 59) 48.
[65] *UsedSoft* (n 59) 42.
[66] ibid 84.

to the value of the copy), arguing that the format and medium through which the copy was delivered did not change the legal and economic substance of the operation.[67]

However, they were able to do this given the *lex specialis* nature of the Software Directive, which rules out the application of Art 3 InfoSoc (communication to the public), and qualifies any transfer of a work. i.e., a computer program, regardless of its form (tangible or intangible), as a distribution under Art 4 Software Directive.[68] Unlike InfoSoc, the Software Directive does not distinguish between tangible and intangible objects,[69] meaning that the CJEU was able to confirm the existence of digital exhaustion in relation to the Software Directive.[70]

> *It must be considered that the exhaustion of the distribution right under Art 4(2) Software Directive concerns both tangible and intangible copies of a computer program, and hence also copies of programs which, on the occasion of their first sale, have been downloaded from the internet onto the first acquirer's computer.*[71]

Even though, given the *lex specialis* nature of the Software Directive, the judgment has limited application in relation to the interpretation of the InfoSoc Directive, it nevertheless does provide an example of the CJEU adopting policy arguments rather than a literal interpretation of the law. The court used two policy arguments.[72] Firstly, it claimed that, "[t]he on-line transmission method is the functional equivalent of the supply of a material medium,"[73] thereby reclarifying a perpetual licence as a sale.[74] Secondly, and without relying on any particular wording in the Software Directive,[75] the CJEU also stressed an internal market rationale in that it was keen to avoid the partitioning of the market. The limitation of the doctrine of exhaustion to the copies sold on a tangible medium,

> *Would allow the copyright holder to control the resale of copies downloaded from the internet and to demand further remuneration on the occasion of each new sale, even though the first sale of the copy had already enabled the rightsholder to obtain an appropriate remuneration.*[76]

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[67] ibid 45-47.
[68] ibid 51.
[69] ibid 58.
[70] P. Mezei (n 5) 52.
[71] *UsedSoft* (n 59) 59.
[72] P. Mezei (n 5) 111.
[73] *UsedSoft* (n 59) 61.
[74] E. Rosati (n 55) 204.
[75] ibid 204.
[76] *UsedSoft* (n 59) 63.

So, in the court's view, restricting the resale of copies of software downloaded from the internet, by means of an extended control over such copies, would go beyond what is necessary to safeguard protection of copyright.[77]

However, the CJEU did take the opportunity to specify how under Art 6(1) WCT, which constitutes the basis of Arts 3 and 4 InfoSoc, the rights of distribution and communication to the public should be distinguished on the basis of the type of transfer and use of the work, having distribution every time there is a transfer of ownership of the copy:

> *In a situation such as [here], the copyright holder transfers the right of ownership of the copy of the computer program to his customer [..] it follows from Article 6(1) WCT, in the light of which Articles 3 and 4 of InfoSoc must, so far as possible, be interpreted,[78] that the existence of a transfer of ownership changes an 'act of communication to the public' provided for in Article 3 InfoSoc into an act of distribution referred to in Article 4 InfoSoc which, if the conditions in Article 4(2) InfoSoc are satisfied, can, like a 'first sale … of a copy of a program' referred to in Article 4(2) Software Directive, give rise to exhaustion of the distribution right.[79]*

6.2 Digital Exhaustion under InfoSoc – *Tom Kabinet*[80]

Following *UsedSoft* national courts sought to tackle its implication with reference to digital works other than software.[81] In 2018, in *Tom Kabinet,*[82] the CJEU finally answered the question of whether digital exhaustion is allowed under Art 4(2) InfoSoc. However, prior to *Tom Kabinet,* the CJEU had made it (indirectly) clear that *UsedSoft* could not be extended beyond software,[83] and how distribution may only be exhausted in relation to the tangible support of a work, not also the work itself.[84] In *Allposters* the CJEU identified distribution within Art 4 InfoSoc as applying only to a work or a tangible copy thereof, as Art 4(2) InfoSoc refers to the first sale or other transfer of ownership of "that object," with Recital 28 referring to "tangible article".[85] The Court held that by using such terms the EU legislature intended to give authors control over the initial marketing in the EU of each tangible object incorporating their intellectual creation.[86] As such exhaustion of the right of distribution only applies to the

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[77] ibid 63.
[78] *Peek & Cloppenburg* (n 50) 30.
[79] *UsedSoft* (n 59) 52.
[80] *Tom Kabinet* (n 2).
[81] E. Rosati (n 55) 205.
[82] *Tom Kabinet* (n 2).
[83] E. Rosati (n 55) 205; Case C-419/13 *Art & Allposters International*, EU:C:2015:27; Case C-174/15 *Vereniging Openbare Bibliothecken*, EU:C:2016:856.
[84] Opinion of AG Villalon in *Art & Allposters International*, C-419/13, EU:C:2014:2214, 67
[85] *Art & Allposters* (n 83) 34.
[86] ibid 37.

tangible copy of a work,[87] with such interpretation supported by international law, i.e. the WCT.[88]

Tom Kabinet was a Dutch business trading in second-hand eBooks. The Court of the Hague held that *Tom Kabinet* was not liable for unauthorised acts of communication, but it was unclear as to whether *Tom Kabinet* could rely on digital exhaustion, and whether any acts of reproduction by subsequent users could be regarded as lawful. A referral was made to the CJEU, asking if the downloading of an eBook for an unlimited time, with the rightsholder receiving remuneration could qualify as, "any form of distribution to the public of the original of a work or copy thereof by sale or otherwise" as per Art 4(1) InfoSoc.

While AG Szpunar in his opinion showed sympathy towards digital exhaustion,[89] he ultimately rejected the concept and advised the CJEU to rule that the supply of eBooks by downloading online for permanent use is not covered by distribution within Art 4 InfoSoc, but by the right of communication within Art 3(1) InfoSoc.[90]

Referring to the WCT he recalled how its drafters had adopted an umbrella solution in relation to downloading, "which, while giving priority to the act of communication to the public, does not preclude the application of the distribution right."[91] (Such umbrella solution meaning that signatories have an obligation to grant an exclusive right to authorise on demand transmission/delivery, but that the legal characterisation of rights is left to national legislation.[92]) AG Szpunar also noted the WCT Agreed Statement to Arts 6 and 7, limiting application of those provisions to "fixed copies that can be put into circulation as tangible objects." InfoSoc is the implementation of the WCT and by adopting the Directive, the EU took a position "in favour of the right of communication to the public being applicable to the supply of works by downloading online and also of the right of distribution, and therefore the exhaustion of that right, being limited solely to tangible copies. More specifically, downloading is covered by the right to make works available to the public, provided for in Article 3(2) InfoSoc."[93]

[87] E. Rosati (n 55) 205.
[88] *Art & Allposters* (n 83) 40.
[89] P. Mezei (n 5) 133.
[90] Opinion of AG Szpunar in *Tom Kabinet* (n 6) 98-99.
[91] ibid 33.
[92] P. Mezei (n 5), 27; M. Fiscsor, *The Law of Copyright and the Internet* (OUP, 2002) 205-206.
[93] Opinion of AG Szpunar in *Tom Kabinet* (n 6) 36.

He also further noted that the right of reproduction in InfoSoc Art 2 also precludes the application of distribution, as any downloading of a digital file entails the creation of a copy of that file on the receiving computer,[94] therefore infringing the right of reproduction. He further pointed out that no limitations and exceptions applied to the reproduction of new copies.[95] Art 5(1) Software Directive contains an exception to the right of reproduction for the acts "necessary for the use of the computer program."[96] InfoSoc contains no comparable exception.

He considered that *UsedSoft* could not be applied by analogy, as the subject matter was different.[97] Also, there is no communication to the public in the Software Directive,[98] and neither does the Software Directive mention that the rule of exhaustion be limited to copies incorporated in a tangible medium.[99]

Finally, AG Spunzar considered policy arguments relating to digital exhaustion. On the one hand, exhaustion might strengthen competition; lead to more innovation; guarantee privacy; and prevent anti-competitive practices. On the other hand, digital copies do not deteriorate; the multiplication of works may pose a risk to competition; it is difficult to verify compliance with rules, especially among end users; it might be difficult to differentiate between lawful and illegal copies; and the whole idea of exhaustion might become obsolete in the wake of streaming services.[100] He highlighted how, because of the rise of streaming, permanent downloads have been "relegated to the past"; thus, any decision admitting digital exhaustion would only "resolve a problem that does not really need to be resolved".[101]

The CJEU itself however overlooked any policy considerations, adopting a literal interpretation of the law holding that the supply by downloading, for permanent use, of an eBook is covered by the concept of communication to the public, more specifically by making available to the public within the meaning of Art 3(1) InfoSoc.[102] It concluded that the right of distribution

[94] ibid 45.
[95] ibid 49.
[96] ibid 66.
[97] ibid 56.
[98] ibid 64.
[99] ibid 65.
[100] ibid 80-96; P. Mezei (n 5)135.
[101] Opinion of AG Szpunar in *Tom Kabinet* (n 6) 95.
[102] *Tom Kabinet* (n 2) 74.

solely covers the transfer of ownership of tangible copies of works, while the right of communication to the public covers interactive on-demand dissemination of copies in the broadest sense.[103]

So, despite the arguments that could have supported the admissibility of digital exhaustion within art 4(2) InfoSoc, the CJEU adopted a literal interpretation of existing sources and denied the extension of the principle of exhaustion to digital copies. The Court interpreted Art 4(2) InfoSoc to limit the scope of distribution to tangible objects,[104] and held that *UsedSoft* is a *lex specialis*, which intentionally assimilates tangible and intangible copies of computer programs.[105] It also distinguished the economic argument holding that the sale of a printed book was not functionally equivalent to the transfer of an eBook, since digital files are not subject to deterioration and the exchange of copies does not entail additional cost or effort.[106] A digital second hand market for eBooks would therefore have more impact on a rightsholder's ability to obtain a proper reward.[107] Implicitly the CJEU seemed to assume that digital exhaustion would hamper the fulfilment of the essential function of copyright, i.e. granting to rightsholders appropriate remuneration from exploitation of their works.[108]

The CJEU found that *Tom Kabinet's* service complied with all relevant prerequisites of communication to the public,[109] concluding that members of its reading club represented a "new public."[110]

6.3 Digital Exhaustion: End of the Story?

However, the CJEU did not entirely shut the door on digital exhaustion, as it held that there would be no "public" if a platform only made available a single copy of a protected work to a specified user at any given time, and such copy became unusable by that user after the relevant period had expired.[111] And, if it was possible to ensure, from a technical point of view, that "(i) only one copy of a work may be downloaded in the period during which the user of a work

[103] ibid 39-52.
[104] ibid 39.
[105] ibid 55.
[106] ibid 57.
[107] ibid 58.
[108] C. Sganga (n 1) 169.
[109] *Tom Kabinet* (n 2) 69.
[110] ibid 70-71.
[111] E.Rosati (n 55) 210.

actually has access to a work and (ii) after that period has expired, the downloaded copy can no longer be used by that user,"[112] then the communication at issue would not be to a public and, as a result, would not fall within Art 3(1). Mezei concludes that this finding is problematic, as it is not clear if this means that in the alternative digital exhaustion is possible? [113]

Sganga argues how *Tom Kabinet* leaves unanswered most of the challenges and shortcomings triggered by the digital revolution, and by the massive changes in the forms of commercialisation of protected works, now heavily tilted towards online distribution and consumption.[114] When digital copies are fully and permanently transferred online the transfer is functionally closer to a sale/distribution than to a communication to the public, and the copy is enjoyed as a product and not as service.[115] This triggers the same protection and balancing of needs that a material distribution would engender, yet a tangible-only reading of Art 4 InfoSoc forces the classification of such acts under Art 3 InfoSoc.[116]

Mezei, also notes how there are a number of inconsistencies with the judgement. Firstly, it overlooks the fact that in *UsedSoft* the CJEU ruled that a licence might be transformed into a sale if the right to use a computer program lasts for an indefinite period "in return for payment of a fee designed to enable the copyright holder to obtain a remuneration corresponding to the economic value of the work of which he is the proprietor."[117] Mezei points out that this "transformation" is equally applicable to the supply of eBooks.[118] He also points out how the CJEU partially misconstrued the concept of functional equivalence.[119] Whilst confirming that, from an economic point of view, the sale of a computer program on a material medium and the sale of a computer program by downloading from the internet are similar, since the transmission method is the functional equivalent of the supply of a material medium,[120] the CJEU then unnecessarily extended the scope of this theory by reference to the non-deterioration of copies, treating the files as perfect substitutes which therefore pose an economic danger to the original market of rightholders.[121] Mezei argues that such arguments,

[112] *Tom Kabinet* (n 2) 69.
[113] P. Mezei (n 5) 140.
[114] C. Sganga (n 1) 171.
[115] ibid 171.
[116] ibid 171.
[117] E. Rosati (n 55) 49.
[118] P. Mezei (n 5) 137.
[119] ibid 137.
[120] *Tom Kabinet* (n 2) 57.
[121] P. Mezei (n 5) 137, *Tom Kabinet* (n 2) 58.

whilst true for software as well, represent policy arguments but are independent of the functional equivalence theory.[122] Mezei also points out the complexity and inconsistency of the case law, and suggests an urgent need for statutory or judicial clarification, noting elsewhere how not only does the CJEU leave various questions open, but dynamic changes to technology, business, social reality and the law mean that nothing is set in stone and can change at a moment's notice.[123]

So, as in the US with *ReDigi*, the question also remains in the EU as to whether the door is entirely closed to digital exhaustion, and whether, given technological developments the judgements discussed here are now out of date.

7. NFTs and Digital Exhaustion?

So far this Chapter has outlined the current legal position regarding digital exhaustion. It will now consider whether NFTs, as the latest technological development, can nudge the door open towards a concept of digital exhaustion.

As we have seen from the above, the two main legal impediments for digital exhaustion are: (1) the inability to sell i.e. transfer ownership of a particular legal copy and relatedly, the ability of the seller to retain the original copy; and (2) the requirement that the copy be tangible or physical.[124]

It is the argument here that NFTs can overcome both hurdles.

7.1 NFTs - Transfer of Ownership: Forward-and-Delete?

As CryptoAssets, and therefore objects of personal property (see Chapter 3 §6.2), NFTs are capable of first sale and transfer of ownership. The greatest breakthrough with blockchain technology is its ability to solve the "double spend" problem.[125] The combination of cryptography and distributed systems secures transfer of ownership,[126] making the concept of

[122] P. Mezei (n 5) 138.
[123] P Mezei, 'Hop on the Roller Coaster – New Hopes for Digital Exhaustion?' (2022) 71 GRUR International, 1017-1018.
[124] P. Shaverdian (n 20).
[125] S. Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System* (2008), https://bitcoin.org/bitcoin.pdf.
[126] J.A.T. Fairfield, 'Bitproperty' (2015) 88 S. Cal. L. Rev. 805, 820.

a digital asset possible for the first time.[127] The duplication of an NFT on the blockchain is not possible because only one version can exist at any time and, once verified and validated, a transaction ensures that the particular NFT is transferred in its entirety and that the original seller does not retain the original NFT.[128]

In 2001 the USCO noted how forward-and-delete technology did not exist, and if such technology was developed in the future it would need to be "robust, persistent and easy to use."[129] Again, it confirmed in 2016 that the technology had not yet become a practical reality,[130] with the Second Circuit in *ReDigi* adding how, "[O]ther technology may exist or be developed that could lawfully effectuate a first sale,"[131] thereby leaving the door open for digital exhaustion.[132] Blockchain now alleviates any concern that forward and delete technology is not 100% effective.[133]

In the UK, the Law Commission discusses how a transfer operation within a CryptoToken system typically involves the replacing, modifying, destroying, cancelling, or eliminating of a pre-transfer CryptoToken and the resulting and corresponding causal creation of a new, modified or causally-related CryptoToken.[134] In its final report on Digital Assets, it discusses two opposing views as to the legal characterisation of such a transfer operation.[135] Firstly, that such a transfer extinguishes a pre-transfer object of personal property and creates a "new", post-transfer object of personal property (the "extinction/creation analysis"). Secondly, that such a transfer involves the persistence of an object of personal property through the transfer (the "persistent thing analysis"). They conclude that there is no single correct answer. However, consultees offered a number of reasons as to why the most practically accurate analysis is the latter persistent thing analysis.[136]

So, from a technical point of view, it is possible to argue that the actual NFT is transferred, i.e. that no interim reproduction occurs during the transfer and that the data carrier that embodies

[127] M.J. Casey & P. Vigna, *The Truth Machine* (Harper Collins, 2018) 235.
[128] P. Shaverdian (n 20).
[129] USCO (n 24) 97-98.
[130] Internet Policy Task Force (n 31)
[131] *Capitol Records* (n 2).
[132] P. Mezei, (n 5) 127; S. Reis, 'Toward a Digital Transfer Doctrine' (2014) 109(1) NUL Rev. Fall 173, 185.
[133] USCO (n 24) 98.
[134] Law Commission, *Digital assets: Final report* (HC 1486, Law Com 412, June 2023) para 2.76.
[135] ibid.
[136] ibid.

the actual file is transferred.[137] Durham concurs with this view, noting how a file is never actually moved or reproduced, but how title passes within the smart contract itself,[138] and Shavederian adds how the blockchain could potentially relieve the reproduction issue through its ability to record transfer of title, in an immutable manner, to a digital file without making a copy of the file.[139]

So, the conclusion is that NFTs are personal property, capable of transfer of ownership and can only be possessed by one user. A copy of the NFT cannot be retained, and no interim reproduction occurs on transfer. Regarding the underlying artwork, a copy of this can be retained. However, it is the argument here that the digital art file is separate to the NFT in its entirety. An NFT is a CryptoToken and is a thing into which the digital art is incorporated, and is unique. It is therefore conceptually, and legally a separate thing from the digital art file. It is the CryptoToken which is either linked to or embedded with the digital art that has value, not the digital art itself. So, it is the NFT in its entirety that is unique and cannot be duplicated, rather than the digital art file itself.

7.2 NFTs - Tangible?

In 2001 the USCO stated how "a lawfully made and owned copy on a removal storage medium can easily be transferred by physical transfer of the item, and that activity is within the current reach of 17 USC §109."[140] However, the Second Circuit in *ReDigi* failed to rule on the issue of whether digital files, independent of any physical storage device in which the file is fixed, could be considered material objects,[141] and the EU has also failed to answer this question.[142]

As discussed in the previous section, an NFT is more than just a digital file in that it is a CryptoToken into which a particular digital file is either linked or embedded. The Agreed Statement concerning Arts 6 and 7 WCT limits the scope of distribution and its exhaustion to "fixed copies that can be put into circulation as tangible objects."[143] So, can an NFT be considered to be a tangible object into which a copy of a digital file is fixed, thereby bringing NFTs within the remit of distribution and allowing for digital exhaustion and lawful secondary

[137] *Capitol Records* (n 2) 656.
[138] J.L. Durham (n 1) 158.
[139] P. Shaverdian (n 20).
[140] USCO (n 24) 100.
[141] *Capitol Records* (n 2) 656.
[142] P. Mezei (n 5) 140.
[143] Agreed Statements concerning the WCT (n 12)

sales? Certainly, if stored offline in a cold wallet as a "removable storage medium" then arguably so.[144] However, if stored online in a hot wallet this thesis concludes that it is also possible to classify an NFT as a fixed copy that can be put into circulation as a tangible object.

The Law Commission in its final report on Digital Assets comments how, "digital assets are not tangible in the traditional sense,"[145] before adding in a foot note how "digital assets such as crypto-tokens [which therefore includes NFTs] do have a tangible, albeit highly distributed, existence in that they rely on real physical infrastructure including hardware, the work of humans and/or machines, energy expenditure, network effects, liquidity and integration in existing social, economic or financial infrastructure."[146] Durham argues that a blockchain is not a mere intangible database, because the database is stored on every single, and tangible, node. If an NFT is stored on-chain the portion of the blockchain that stores that metadata is a copy because it resides in a material object, i.e., a single virtual computer. If stored off-chain, then the specific server or storage device that contains the work is the copy.[147] Pinar Caglayan Aksoy also argues how the features of blockchain technology are eligible for fulfilling the role of the tangibility criterion for a digital asset.[148]

It is beyond the remit of this thesis to delve into the technicalities behind blockchain and NFTs, suffice to say that there do exist technical arguments that NFTs are in fact "tangible."

8. The Law Needs Updating?

We now have new technology with NFTs, and copyright law is out of date. Empirical evidence from this thesis demonstrates how NFT platforms enforce an overall perception of ownership, even if such a view is out of step with their ToS (Chapter 7 §2). There is a permanent transfer of an NFT fixed with the underlying artwork (however incorporated within the NFT) in return for a fee. Ownership of an NFT is transferred, distinguishing the transfer as a distribution, rather than communication to the public.[149] NFTs as CryptoAssets are personal property, and technically are not precluded from being classified as tangible. Finally, blockchain technology

[144] USCO (n 24) 100.
[145] Law Commission, *Digital Assets: Final Report* (n 134) para 2.48.
[146] ibid para 2.48, fn 68.
[147] J.L. Durham (n 1) 158.
[148] P. Caglayan Aksoy, 'The applicability of property law rules for CryptoAssets' (2023) 15(1) LIT 185 https://doi.org/10.1080/17579961.2023.2184140, 214.
[149] *UsedSoft* (n 59) 52.

ensures that a token can only be owned by one person at any one time, alleviating the concern that forward and delete technology is not 100% effective.[150]

Legislators in the US in 2001 were not totally opposed to extending 17 USC §109 to include a digital FSD, and technology today is unrecognisable to then. This research argues that now the analogy of NFTs to material objects is currently far more compelling an argument than to digital transmissions as perceived by the USCO in 2001, particularly as NFTs are now regarded as personal property.[151] Regarding policy arguments,[152] NFTs do not degrade over time and, whilst currently complex, access to NFTs will become easier than say a physical painting given the global nature and ease of the internet, but as pointed out by Mezei above, such arguments are independent of the functional equivalence theory.[153] Finally, permitting exhaustion with NFTs would not increase the risk of piracy, as the whole reason for NFTs is resale, rather than the prevention of copyright; they are typically traded for their value and not necessarily to prevent copying.

This thesis recommends how the law should be interpreted in order to reflect the changing technological landscape. When a protected work is incorporated within an NFT, which is fully and permanently transferred online, the transfer of the copy of that work is functionally closer to a sale/distribution than to a communication to the public, and the copy is enjoyed as a product and not as service.[154] This triggers the same protection and balancing needs that a material distribution would engender, and is required so the digital environment in relation to NFTs is not deprived of exhaustion: its positive effects in terms of access, availability, and affordability of works; and its balancing role vis-à-vis competition, innovation and a set of conflicting rights and freedoms[155] InfoSoc highlights compliance with the fundamental principles of law and property, including IP, and freedom of expression and public interest,[156] together with providing a high level of protection for IP.[157]

[150] USCO (n 24) 98.
[151] *Osbourne v Persons Unknown, Ozone* [2022] EWHC 1021 (Comm)
[152] Opinion of AG Szpunar in *Tom Kabinet* (n 6) 80-96; P. Mezei, (n 5)135; USCO (n 24) 82.
[153] P. Mezei (n 5) 138.
[154] C. Sganga (n 1) 171.
[155] ibid.
[156] InfoSoc Recital 3
[157] InfoSoc Recital 4

Much has been written on the problems of digital ownership in the broader sense, in a non-NFT environment, with many making the case for digital exhaustion.[158] From a US position, Fairfield (in 2022 and pre-*Osbourne*) discusses digital exhaustion in the context of NFTs, suggesting how they should be classed as property, and how a court could conclude that the transfer of an NFT was the transfer of an asset.[159] Durham assesses the need for a FSD for NFTs, but from a purely US perspective.[160] Lim also discusses the US position, highlighting the hurdles of tangibility and reproduction,[161] arguing for an amendment to 17 USC §109 to allow for FSD to apply to digital transfers under the condition that any reproduction of the copy is temporary.[162]

As discussed above in §7.1, no interim reproduction of the NFT occurs on the transfer of an NFT as title passes within the contract itself. In terms of the underlying work, as with a physical painting the reproduction right is not subject to exhaustion. However, within the EU/UK there is no exclusive display right, so a lawful owner of a copy does not infringe copyright by displaying a work that they lawfully own.[163] Within the US limitations on exclusive rights are covered by the doctrine of fair use contained in 17 USC §107, which is applied on a case by case basis. However, 17 USC §106(5) does grant a rightsholder the exclusive rights to display a work, but 17 USC §109(c) permits the owner of a lawfully made copy the right to display the work without the consent of the rightsholder.

The conclusion here is that digital exhaustion is required with CryptoArt NFTs, in order to reflect, keep up with and legitimise the reality of what is happening in practice. Given their unique characteristics, NFTs could, and should be used to nudge the door open on digital exhaustion.

9. Conclusion

In the UK, as discussed in Chapter 3 §6, whilst the proposed Property (Digital Assets etc) Bill [HL] on the one hand provides legal certainty that digital assets are capable of being things to

[158] A. Perzanowski & J. Schultz (n 3); C. Sganga (n 1); S. Reis (n 132).
[159] J.A.T. Fairfield (n 1) 1300.
[160] J.L. Durham (n 1).
[161] C. Lim, 'The Digital FSD in a blockchain world' (2022) 91 Fordham L.Rev 721, 747.
[162] ibid 753.
[163] A. Cerri, 'Spanish Court finds that virtual exhibition of NFTs based on paintings is harmless use' (*IPKat,* 20 February 2024) https://ipkitten.blogspot.com/2024/02/spanish-court-finds-that-virtual.html; Juzgado de lo Mercantil no 09 de Barcelona, No de Resolucion: 11/2024.

which personal property rights can relate, it creates a grey area in relation to the legal characterisation of such personal property. The Bill provides that a thing is not prevented from being personal property merely because it is neither a thing in possession (so tangible) or a thing in action (so intangible). So, not only does this position leave unanswered the question of whether NFTs are tangible or intangible, but by creating a third category of thing, it also suggests that an NFT might in fact fall into neither category. From a copyright point of view, the concept of tangible or intangible matters, and the CJEU has taken a literal approach to the distinction,[164] so the current uncertainty or creation of any such third category of thing is out of line with the current position of EU copyright law.

From a copyright point of view and in order to support the development of the NFT ecosystem clarity is required. Sganga points out how, within the EU the interpretation of tangible and intangible in relation to the application of the exclusive rights of distribution and communication to the public has made it impossible to adapt the provision to the evolution of copyright markets through a technologically neutral, functional approach to the various forms of exploitation.[165] The adoption of such an approach in relation to NFTs would help to provide certainty for the evolution of NFTs and rescue them from a grey zone of conduct falling between Articles 3 and 4 InfoSoc Directive.[166] The argument here is that the shift towards NFTs being classified as property nudges NFTs towards being covered as tangible objects capable of distribution, rather than intangible files communicated to the public. NFTs are functionally more equivalent to tangible physical paintings rather than intangible digital files in that they are capable of transfer of ownership as objects and are rivalrous, and the features of blockchain technology are eligible for fulfilling the role of the tangibility criterion for a digital asset.[167]

This conclusion reflects the factual reality of how NFT platforms function, and how CryptoArt replicates some of the features of a property relationship between a person and an object. As noted by the Law Commission,

> *The functionality of crypto-tokens allows a person to control access to the crypto-token and gives that person the ability to exclude others from it. We conclude that the law can recognise this factual state of affairs and strengthen this technical*

[164] *Tom Kabinet*, C-263/18, EU:C:2019:1111.
[165] C. Sganga (n 1) 155.
[166] ibid.
[167] P. Caglayan Aksoy (n 148) 214.

> *functionality by aligning it with the social (and legal) construct of personal property rights. In this way, digital things that are recognised by the law as being capable of attracting personal property rights would have some of the functional qualities of an object of personal property rights by technical design, underpinned by a social layer of legal recognition. That accurately reflects commercial realities and the way in which market participants treat such digital things.*[168]

At a fundamental level from a copyright point of view, users are allowed to sell property i.e., a painting even if it contains a protected work. That is what exhaustion means. The reason being that copyright cannot take precedence over the right of ownership held by the person who has acquired a copy of the work in question as an object.[169] The author is deemed to have obtained the remuneration due in respect of that copy i.e., fair reward for the initial distribution and relinquished any control of secondary markets.[170]

By classifying CryptoAssets, so including NFTs, as property users should therefore be allowed to buy and sell them as objects. However, the point is that if they contain a protected work, such as as CryptoArt, then technically speaking, unless the NFT is classified as tangible, such sale in the eyes of copyright law is not possible or legal. In the context of the right of distribution, the expressions "copies" and "original and copies" refer to fixed copies that may be put into circulation as tangible objects,[171] seemingly excluding works in digital format, i.e., intangible objects. Unless classified as tangible items, the whole NFT market is therefore invalidated.

The question may be why do we need to clarify this point when we have code, in that a decentralised ledger functions as designed and works perfectly well? The problem is that code does not replace law,[172] so the underlying blockchain technology does not exclude the application of legal rules when something goes wrong with the transaction, as it inevitably does and will do.[173] Although problems will remain in practice, such as identifying the other party and questions regarding jurisdiction, legal rules, i.e. copyright will still apply and the intervention of legal rules is inevitable.[174]

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[168] Law commission. *Digital Assets: final report* (n 134) para 3.12.
[169] Opinion of AG Szpunar in *Tom Kabinet* (n 6) 1-2.
[170] P. Mezei (n 5) 13.
[171] Agreed Statements concerning the WCT (n 12).
[172] L. Lessig *Code and Other Laws of Cyberspace* (Basic Books, 1999)
[173] P. Caglayan Aksoy (n 148) 193.
[174] ibid 194.

This thesis argues for the need to reclassify and treat NFTs as tangible CryptoAssets, both from a legal and a policy point of view, capable of distribution. Whilst there is a general move towards the application of property rights to CryptoAssets, the approach remains at a national level. It is imperative, given the global nature of CryptoAssets that a more international policy is adopted, in order to provide legal certainty for NFTs.

The final word for this Chapter will go to the Judge, Ms Clare Ambrose:

> *There was an interesting issue [in] the evidence as to the nature of NFTs as assets, and whether they are artwork…… fortunately, such issues need not be decided by me.*[175]

[175] *Soleymani v. Nifty Gateway LLC* [2022] EWHC 773, 34

Chapter 9: Is the Minting of an Unauthorised NFT Copyright Infringement?

1. Introduction

Questions of copyright infringement arise with the minting of an unauthorised NFT, i.e., when a user creates an NFT using an artwork which they do not own, or have the rights to, the copyright.[1] As acknowledged throughout this research, NFTs are novel, technologically complicated, and do not "fit" within the existing copyright framework, and questions arise in relation to: what exactly is an NFT; how it is created or "minted" and, is an unauthorised NFT actually copyright infringement?

This Chapter argues that the final question should be relatively academic. As discussed in Chapter 3 §4.4, courts have been shown to be reasonably pragmatic when it comes to enforcing IPR in relation to NFTs,[2] and although academics and commentators alike question whether, due to the technical nature of NFTs and current copyright law, infringement does actually occur,[3] a practical and pragmatic approach, based on empirical evidence, would assume that the minting of an unauthorised NFT does infringe copyright. However, it is insufficient from a legal point of view to simply state this position, even when the empirical evidence (Chapter 7 §3.1) demonstrates that in practice this is the approach taken and the assumption made by the platforms.

This Chapter analyses the existing law, concluding with how the position taken in practice can be justified from a doctrinal perspective. The research is primarily UK and EU focused, given that since Brexit this is broadly the position that still endures within the UK.[4] However, for context and insight, and in light of the global nature of NFTs and the location of the platforms, it also considers the position in the US and further afield.

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[1] A. Guadamuz, 'The Treachery of Images: NFTs and Copyright'(August 15 2021) JIPLP, jpab 152 https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3905452; B. Bodo & Others, 'The Rise of NFTs: these aren't the droids you're looking for' (2022) 44(5) EIPR 265-282 https://ssrn.com/abstract=4000423.
[2] *Hermes Int'l v. Rothschild*, 590 F. Supp. 3d 647, 650 (S.D.N.Y. 2022); *Yuga Labs, Inc. v. Ripps*, 2:22-cv-04355, (C.D.Cal.).
[3] A. Guadamuz, (n 1) 4; Bodo (n 1); H. Brorsen. 'Minting NFTs – a Fresh Breath for European Copyright Law?' (European Blockchain Centre, 20 April 2022) https://www.ebcc.eu/presentation-by-hans-brorsen-2022/.
[4] *Tunein Inc v Warner Music UK Ltd & Others* [2021] EWCA Civ 441 (26 March 2021).

Platform liability is covered in the following Chapter 10. This current Chapter focuses on whether an individual user infringes copyright if they mint an unauthorised NFT, and establishes the underlying argument for a finding of copyright infringement from a position of both an author's economic and moral rights. Economic rights protect an author's financial well-being, allowing them to prohibit unauthorised use of their work, and guaranteeing them participation in any income derived from any exploitation of the work,[5] whereas historically moral rights allow an author to safeguard the provenance of their work, as well as their personality and reputation.[6]

2. Which Economic Right is Infringed?

Infringement in this context involves a user who, without the authorisation of the copyright owner, does any of the acts restricted by copyright,[7] in relation to the work as a whole or a substantial part of it, either directly or indirectly.[8] The definition of what is meant by a "substantial part" is not precise,[9] being a matter of quality not quantity,[10] and a "substantial" part need not necessarily be extensive if it is the authors own intellectual creation.[11] However, this Chapter assumes that the work, i.e. an underlying associated artwork used to mint an unauthorised NFT is a protected work, and that the user has "copied" a substantial part of the work.

Subject to relevant exceptions and limitations, international copyright law has seen the gradual inflation of economic rights to include, inter alia: reproduction, adaptation, communication and making available to the public, performance, display, distribution, renting and lending.[12] From a UK and EU perspective this Chapter focuses on reproduction (and adaptation); communication and making available to the public, and distribution. It demonstrates how within each of these three areas it is possible to argue that an unauthorised NFT is infringement, concluding how, in the long-term, infringement based on the exclusive distribution right is the most suitable, technically neutral, pragmatic and future proof solution.

[5] G. Dutfield & U. Suthersanen (2020), *Global IP Law* (2nd edn, EE 2020) 115.
[6] ibid 128.
[7] CDPA s 16(2).
[8] CDPA s 16(3).
[9] S. Stokes (2019) *Digital Copyright* (5th edn, Hart 2019) 47.
[10] *Ladbroke v William Hill* [1964] 1 WLR 273.
[11] Case C-5/08 *Infopaq International*, EU:C:2012:16.
[12] G. Dutfield & U. Suthersanen (2020) (n 5) 115; TRIPS Art 11; WCT Art 8; WPPT Arts 10, 14.

Within the US 17 USC §106 grants an author the exclusive rights to reproduce and distribute copies of a work, to publicly display a work and to prepare derivative works based on the work. A recent Report to Congress by the US Patent & Trademark Office and the US Copyright Office concluded how most believe that current IP laws within the US are adequate to deal with infringement.[13]

2.1 Reproduction

Historically, and as provided by the Berne Convention, the right to make copies of a protected work is the seminal author's right.[14] Art 9(1) Berne Convention states, "Authors of literary and artistic works protected by this Convention shall enjoy the exclusive right of authorising the reproduction of these works, in any manner or form." The WIPO Guide to the Berne Convention adds that the words "in any manner or form" are wide enough to cover all methods of reproduction known or yet to be discovered, it is simply a matter of fixing the work in a material form.[15] The Convention does not distinguish between original first fixation and subsequent copies of works, so covers any form of reproduction, including both direct and indirect forms and format shifting.[16]

Contemporary technologies, i.e. the internet, have presented challenges to the effective definition of the reproduction right,[17] but as made explicit in the Agreed Statement concerning the WCT the drafters of the WCT believed that existing international rules were wide enough to cover reproductions in the digital environment, and it was understood that the storage of a protected work in digital form in an electronic medium constitutes a reproduction within the meaning of Art 9 Berne Convention.[18] The exclusive right of reproduction therefore applies to protected works in both tangible and intangible i.e. digital mediums.

[13] USPTO & USCO *NFTs and IP: A Report to Congress* (March 2024) https://www.uspto.gov/sites/default/files/documents/Joint-USPTO-USCO-Report-on-NFTs-and-Intellectual-Property.pdf Introduction.
[14] P. Goldstein & P. Bernt Hugenholtz, *International Copyright* (4th edn, OUP 2019) 286.
[15] WIPO, *Guide to the Berne Convention (Paris Act, 1971)* (Geneva 1978) https://www.wipo.int/edocs/pubdocs/en/copyright/615/wipo_pub_615 9(2).
[16] C. Sganga, 'The right of reproduction' in Rosati, E (ed), *Routledge Handbook of EU Copyright Law* (Routledge 2021) https://ssrn.com/abstract=3803999 4.
[17] P. Goldstein & P. Bernt Hugenholtz (n 14) 287; C. Sganga, (n 16) 1.
[18] Agreed statements concerning the WIPO Copyright Treaty 1996, Concerning art 1(4).

This was the background to which the EU legislator constructed the concept, scope and structure of the right of reproduction,[19] helped, in the past two decades by the CJEU. Art 2 InfoSoc harmonises the right of reproduction as "the exclusive right of authors to authorise or prohibit direct or indirect, temporary or permanent reproduction by any means and in any form, in whole or in part of their work". This conforms to the norms of WIPO, but includes acts of temporary digital copying, whilst exempting from the reproduction right transient copies made during network transmissions for lawful purposes.[20]

The wide language encompasses not only direct, substantial copying of the work within the same medium, but also extends to acts of alteration and adaption, which directly or indirectly transform the work's context or medium.[21] The inclusion of indirect reproductions was meant to stretch rightholders' control to cover copies made not from the original copy of the work but via different means or channels (e.g., the fixation or recording of works communicated to the public, broadcast etc).[22] Required to be given a broad interpretation,[23] the resulting broad definition opts for a technical, rather than functional, identification of what amounts to reproduction, with the aim of controlling every use of the work that requires making a copy of it, regardless of its economic or functional meaning.[24]

In the UK the CDPA provides that the copying of a work is an act restricted by copyright,[25] and that the copying of a protected work means reproducing the work in any material form, which includes storing the work in any medium by electronic means.[26] The US Copyright Act 1976 grants an exclusive right to an owner of copyright to reproduce a protected work,[27] where a copy is a material object in which a work is fixed by any method now known or later developed, and from which the work can be perceived, reproduced or otherwise communicated, either directly or with the aid of a machine or a device.[28]

[19] EC (1998) European Commission, *Proposal for a Directive on the harmonisation of certain aspects of copyright and related rights in the Information Society* (21 January 1998) COM (97) 628 final, explanatory memorandum.
[20] InfoSoc Art 5(1)
[21] G. Dutfield & U. Suthersanen (2020) (n 5) 116.
[22] C. Sganga, (n 16) 7.
[23] InfoSoc Recitals 9,10 and 21.
[24] C. Sganga (n 16) 7.
[25] CDPA s 17(1).
[26] CDPA s 17(2).
[27] 17 USC §106(1).
[28] 17 USC §101.

2.1.1 How Does This Relate to the Minting of an NFT?

Does the minting of an unauthorised NFT infringe the reproduction right i.e., does the reproduction, or copying of a protected work take place during the process of minting an unauthorised NFT?

It is possible to mint an NFT directly on to the blockchain, using a link to a digital image already available on the internet, without actually "copying" the image in the process.[29] However, without exception, all of the platforms reviewed in this research require the uploading of a digital file during the minting process. So, prior to minting an NFT an image either needs to be downloaded and saved onto a user's computer, or indirectly copied from a physical painting – both actions which infringe the exclusive reproduction right. Equally the uploading of a protected work to an NFT platform without authorisation also infringes reproduction. Given that the majority of NFTs are minted via NFT platforms, it can therefore be assumed that, save for any exceptions and limitations, a reproduction of the work takes place during the minting process.[30]

It is difficult to argue that any reproduction by downloading is sufficiently transient or incidental in order for it to qualify for an exception to the right of reproduction as a temporary copy as per CDPA s 28A.[31] Even if a temporary copy, any reproduction during the minting process would be precluded from any exception, given that its use is not lawful and clearly has an economic significance in that the user is minting the unauthorised NFT for financial gain.[32] Equally, from a US point of view, any fair use defence would likely be unsuccessful, given the commercial nature of NFTs.[33]

As will be discussed in further detail below, this issue arose in an infringement case in China. The Chinese Court held that, although technically there is no reproduction in the minting process itself, the right of reproduction may be violated in the minting process, as the process of uploading a work to an NFT platform involves making copies of the original work.[34]

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[29] A. Guadamuz (n 1) 4, H. Brorsen (n 3).
[30] Case C-435/12 *ACI Adam & Others,*EU:C:2014:25; Case C-462/09 *Stichting de Thuiskopie*, EU:C:2011:397.
[31] Case C-360/13 *PRCA Ltd v NLA Ltd* , EU:C:2014:1195.
[32] InfoSoc Art 5(1)
[33] 17 USC §107.
[34] *Shenzhen Golden Idea Cultural and Creative Co., Ltd v Hangzhou Bigverse Technology Co., Ltd* (2022) Zhejiang 0192 Minchu No. 1008 (Bigverse) Translation available at https://www.taylorwessing.com/-internet-court-hangzhou_final.

Commentators and policy makers have long called for the adoption of a normative, rather than technical, approach to the right of reproduction, the idea being to include within the scope of reproduction those conducts that have a functional and economic impact on rightsholders interests, rather than only acts that could technically be defined as a reproduction.[35] If adopted, this approach could include within the scope of reproduction both NFTs minted via the NFT platforms *and* the minority of NFTs which "technically" do not involve reproduction, as they link to a digital image already available on the internet. Both scenarios have the equivalent economic impact on a rightsholder, and this conclusion would be in accordance with the high level of protection afforded to rightsholders in the EU, their right to receive appropriate reward for their work and a broad definition of the reproduction right.[36]

2.1.2 Reproduction or Adaptation?

Besides the right of reproduction in Art 9, Art 12 Berne Convention states that authors of literary or artistic works shall enjoy the exclusive right of authorising adaptations, arrangements and other alterations of their works. However, the systematic approach of the Berne Convention does not require union countries to do the same, so there remain significant differences in national laws as to whether adaptations and transformations are reproductions, or whether they are subject to a separate right of adaptation (as in the UK).[37]

An adaptation is usually understood to be the transformation of a work into another form of expression that is not tantamount to a simple reproduction, e.g., making a film out of a novel, although "there is an unclear dividing line between what amounts to a reproduction of a work and what amounts to an adaption of a work."[38]

2.1.3 Adaptation in the EU

At EU level the right of adaptation has only been harmonised in relation to databases[39] and software,[40] and InfoSoc makes no reference to a right of adaptation. However, the definition

[35] C. Sganga (n 16) 3.
[36] InfoSoc Recitals 9, 10 and 21
[37] E. Rosati, 'The right of adaptation has not been generally harmonised at the EU level: true or false?' (*IPKat*, 1 May 2014) https://ipkitten.blogspot.com/2014/05/the-right-of-adaptation-has-not-been.html.
[38] ibid.
[39] Database Directive, Art 5(b).
[40] Software Directive, Art 4(1)(b).

of reproduction in Art 2 InfoSoc applies to instances of direct and non-direct copying,[41] so therefore to situations that would otherwise fall within a general right of adaptation.[42]

In *Art & Allposters*,[43] the CJEU, with the goal of extending the boundaries of EU harmonisation to cover the right of adaptation, stretched the borders of Article 2 InfoSoc to also include modifications of the original medium.[44] *Allposters* sold lawfully acquired posters and other reproductions of paintings, all protected by copyright. Whilst it was clear that the posters on which the right of distribution under Art 4(2) InfoSoc was exhausted after their lawful first sale in the EU could be resold by *Allposters*, it was unclear whether the same could be said for the transfers of posters onto canvas realised by *Allposters* through a chemical process, the so called "canvas transfers."[45] The question was whether the alteration of the medium and commercialisation of the work in a new form could still allow the application of Art 4(2) InfoSoc, so allowing the canvas transfers to be legally resold, or whether instead they constituted an infringement of copyright?[46]

If the canvas transfer was held to be an adaptation the CJEU would have had to declare incompetence as the right of adaptation is not referred to in InfoSoc or harmonised in EU law.[47] However, as there was no multiplication of copies in the transfer process, neither had a "reproduction" occurred. The CJEU solved this dilemma by finding that both the posters and the canvas transfers contained the image of the protected artwork, and for this reason they both fell within the scope of the right of distribution in InfoSoc Art 4(1). Since art 4(2) refers to the first sale of "that object" and Recital 28 to "the work incorporated in a tangible article", the court concluded that the intention of the EU legislator was to give authors "control over the initial marketing of each tangible object embodying their intellectual creation."[48] This implies that exhaustion applies only to the very same copy placed on the market with the rightsholders consent, and not to subsequent alterations to its physical medium.[49] Such an alteration is sufficient to constitute a new reproduction of the work,[50] and the CJEU ruled that the lack of

[41] Case C-145/10 *Painer*, EU:C:2011:798.
[42] E. Rosati, *Copyright and the CJEU* (2nd edn, OUP 2023) 157.
[43] Case C-419/13 *Art & Allposters International*, EU:C:2015:27; C. Sganga (n 16) 19-20.
[44] C. Sganga, (n 16) 19-20.
[45] *Art & Allposters* (n 43) 15.
[46] C. Sganga (n 16) 19-20.
[47] *Art & Allposters* (n 43) 24.
[48] ibid 37.
[49] C. Sganga, (n 16) 19-20.
[50] *Art & Allposters* (n 43) 43.

multiplication of copies was immaterial. The alteration of a medium created a new copy, different to the one that was originally placed on the market,[51] thereby excluding the application of Art 4(2) and justifying a finding of infringement.[52]

2.1.4 How is This Relevant to NFTs?

This case applies where, for example, a physical painting is placed on the market with the rightsholders consent, but that painting is then subject to an alteration to its physical medium. Following *Allposters*, such an alteration could be sufficient to constitute a new reproduction of that work, within the meaning of Art 2(a) InfoSoc, meaning that it is covered by the exclusive right of reproduction. So, an article cannot legally be resold where a reproduction of that article has undergone an alteration of its medium, and is placed on the market again in its new form.

Whilst, as discussed above, there is likely a reproduction in converting a physical image to a digital one, and also during the minting process itself, in the alternative an NFT itself could be classed as an alteration to its physical medium, so a reproduction as per *Allposters*, and therefore an infringement of copyright. Equally, it might be possible to extend this argument to the situation where an NFT is minted from an existing digital file, as whilst the digital file itself might not be copied, the alteration to its medium may be sufficient to justify the finding of reproduction.

The CJEU in *Allposters* justified its decision on the need to offer a high level of protection to rightsholders allowing them to obtain appropriate reward for the commercialisation of their works,[53] where "appropriate" equals to "reasonable in relation to the economic value of the exploitation of the protected work".[54] Since the minting of an NFT constitutes an additional form of exploitation of the same protected work, the finding of infringement is consistent with such objectives, and in order to let rightholders retain control on such new markets.[55]

Admittedly, this is a fairly obscure argument, and a court would be likely to rely on the reproduction right as set out in the previous section. However, it does demonstrate how creative courts, and particularly the CJEU can be when justifying a finding of infringement

[51] ibid 44-45.
[52] ibid 50.
[53] ibid 47.
[54] ibid 48.
[55] ibid 48.

where no obvious infringement of reproduction has occurred. Whilst extending the boundaries of EU harmonisation to include a right of adaption, this case also, whilst having no digital element as such, does also blur the boundaries between the right of distribution and reproduction.

2.1.5 Adaptation Within the UK

The UK does treat adaptation as an economic right.[56] However, it adopts a rules based approach and excludes the application of the right to artistic works, in that it only applies to literary, dramatic or musical works.[57] So, an infringement claim for an unauthorised NFT, in that it involves a protected artistic work, would need to rely on one of the other economic rights in UK law, i.e. reproduction. This means that in the case of artistic works, for the time being, UK law remains in line with EU law.

2.1.6 Adaptation in the US and the Right to Prepare Derivative Works

In the US an author has the exclusive right to prepare derivative works,[58] where a derivative work is defined as "a work based upon one or more preexisting works, such as a translation, […] art reproduction, […] or any other form in which a work may be recast, transformed or adapted".[59] Courts apply the final clause of this definition (i.e., "in any other form") very broadly, thus allowing an author control over an ever-expanding range of new adaptions.[60] This standards based approach, rather than a rules based approach as in the UK, gives courts a broad scope and discretion, and provides an author with a broad, open-ended right to control all adaptations.[61]

As we have seen above, in the EU (and for the time being also the UK), in relation to artistic works, an "adaptation" will only infringe copyright if it also infringes the right of reproduction.[62] This could potentially lead to a different outcome to that in the US i.e., no infringement of reproduction in the UK/EU, but protected by the broader derivative right in the US.[63]

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[56] CDPA s 16(1)e.
[57] CDPA s 21(1).
[58] 17 USC §106(2).
[59] 17 USC §101.
[60] P.R. Goold, 'Why the UK Adaption Right is Superior to the US Derivative Work Right' (2014) 92 Neb. L. Rev 843, 844.
[61] ibid 847.
[62] ibid 874.
[63] ibid 874.

We have seen how in the UK the exclusive right of adaptation does not apply to artistic works, with the result that an infringement claim would need to centre on the reproduction right. The discussion above would suggest a likely finding of infringement of reproduction within the EU/UK. However, if this is not the outcome and a court relies on a technical interpretation of reproduction, then this would likely lead to a different outcome to a claim in the US, which may centre successfully around the broader claim of infringement of derivative right,[64] leading to an inconsistency of protection.

2.1.7 Remixes?

"Remix" culture concerns various different types of adaptations. It is a practice enabled by the widespread access to sophisticated computer technology, where existing works are rearranged, combined or remixed to create a new work.[65] From an infringement point of a view a remixed NFT, as an art work, would not fall within the adaptation right in the UK, but could still be an infringement of the reproduction right in the EU/UK, and in the US such remixes may also infringe the derivative works right.[66]

Many have argued that remixes are culturally important and necessary, and should therefore remain in the realm of amateur creativity and permitted within copyright law. [67] However, this position does presuppose that no commercial gain is derived from the activity, and that the new work does not threaten the "normal exploitation" of the original protected work.

Whilst NFT platforms are accessible to amateurs and encourage a remix culture (Chapter 7 §3.2), they are not exclusively the realm of amateur creatives and, given the financial incentives involved, unauthorised NFTs undoubtably have the potential to threaten the normal exploitation of the original protected work. This means that unauthorised NFTs are unlikely to fall within any exception if available.

However, that is not to say that within the NFT community some artists choose to either turn a blind eye to or positively endorse remixes of their work as NFTs. However, the decision to either permit or prevent and unauthorised NFT should rest with the original artist.

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[64] USPTO & USCO (n 13) 15.
[65] G. Rostama, 'Remix Culture and Amateur Creativity' (*WIPO Magazine,* June 2015) https://www.wipo.int/wipo_magazine/en/2015/03/article_0006.html.
[66] P.R. Goold (n 60) 882
[67] G. Rostama (n 65).

2.1.8 Summary

In conclusion, the minting of an unauthorised NFT via an NFT platform involving a new copy of a protected work would likely infringe the exclusive reproduction right in the UK, EU and US. However, the above discussion demonstrates how, within the EU, if adopting a normative view and/or a broad interpretation of indirect reproduction it may also be possible to find that an NFT minted directly on to the blockchain infringes the reproduction right. This conclusion would be in line and consistent with the broader US right to prepare derivative works

2.2 Communication to the Public

Moving on from the right of reproduction, the exclusive right of communication relates to the right of an author to exploit protected works through intangible means. In the EU two exclusive rights apply to most online uses. As discussed above, copying of protected content is subject to the right of reproduction, but then the online dissemination of that content to the general public is subject to the right of communication to the public.[68] Within the EU, the emphasis on reproduction in the online environment has somewhat decreased, while issues surrounding communication and making available to the public have come to the fore, with reference to both content exploitation and rights enforcement.[69]

Article 8 WCT extends the Berne Convention and provides that authors of literary and artistic works shall enjoy the exclusive right of authorising any communication to the public of their works, by wire or wireless means, including the making available to the public of their works in such a way that members of the public can access these works from a place and at a time individually chosen by them.

Incorporated into InfoSoc Article 3, and UK law via Arts 16, 17 and Art 20 CDPA 1988, the exclusive right covers communication to the public at a distance and includes the exclusive right of "making available," which covers the placing of protected content online in such a way that members of the public may access it from a place and at a time individually chosen by them, i.e. predominantly interactive and on-demand (as opposed to linear) communications. It does not require simultaneous reception of the work by the public, so applies to access by users

[68] J.P. Quintais, 'Untangling the hyperlinking web' (2018) 21 J. World Intellect. Prop. 385, 386.
[69] E. Rosati (n 42) 163; B. Faturoti, 'The CJEU and the educational exception in *Renckhoff*' in D.J. Gervais (ed), *The Future of IP* (EE 2021); Case C-161/17 *Renckhoff,* EU:C:2018:634.

to a website, even if at a different time and place from the original communication.[70] As clarified by Art 3(3) Infosoc, neither the right of communication or making available is subject to exhaustion.

Article 3 InfoSoc harmonises the right of communication to the public in the EU, but fails to define either the concept of communication to the public or the making available to the public,[71] but Recital 23 does provide that the right to communication to the public should be understood in the "broad sense" and that it encompasses, "all communication to the public not present at the place where the communication originates."[72]

Following numerous judgments from the CJEU, the law remains unclear and complex.[73] However, some basic concepts do emerge from the body of CJEU judgments.[74] Namely the case law identifies two essential requirements to assess the concept of communication to the public. These are that there must be an "act of communication," which must then be directed to a "public". These two conditions are essential and cumulative.[75]

2.2.1 Act of Communication

CJEU case law is clear that a transmission of a copyrighted work is not required for an "act of communication" to occur.[76] Nevertheless, where a work is made available without also being transmitted, there does need to be a necessary and deliberate intervention on the side of the user without which a third party could not access the work at issue.[77] More specifically, a user performs an act of communication when they intervene, in full knowledge of the consequences of their action, to give access to a protected work to a third party, and in particular, where, in the absence of that intervention, a third party would not, in principle, be able to access the work.[78]

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[70] InfoSoc Recital 23.
[71] Cases C-403/08 and C-429/08 *Football Association Premier League & Others*, EU:C:2011:63.
[72] InfoSoc Recital 23
[73] J.P. Quintais (n 68) 386; E. Rosati, (n 42) 164.
[74] J P. Quintais, (n 68) 387.
[75] Case C-466/12 *Svensson & Others*, EU:C:2014:76, 16; Case C607-11 *ITV Broadcasting*, EU:2013:147, 21,31; Case C-325/14 *SBS Belgium*, EU:C:2015:764, 15; Case C-279/13 *C More Entertainment*, EU:C:2015:199, 25; Case C-117/15 *Reha Training*, EU:C:2016:379, 37; Case C-160/15 *GS Media*, EU:C:2016:644, 32.
[76] E. Rosati (n 42) 166.
[77] E. Rosati (n 42) 166; J.P. Quintais (n 68) 389.
[78] Cases C-682/18 & C683/18 *YouTube*, EU:C:2021:503, 68; Case C-610/15 *Stichting Brein v. Ziggo BV*, EU:C:2017:456, 26; *Reha Training* (n 75) 46; *GS Media* (n 75) 35.

There is no de minimis threshold.[79] Case law requires that the mere making available of a work in such a way that the persons forming the public may access it is sufficient, irrespective of whether those persons avail themselves of such an opportunity.[80] And the technical means or process used to undertake an act of communication is not relevant.[81]

Therefore, it is possible to argue that the minting of a NFT complies with this condition and is an act of communication, as there is a necessary and deliberate intervention on the part of the user minting the NFT, without which a third party would not be able to access a protected work, as incorporated within an NFT.[82]

2.2.2 Directed to a Public

If an act of communication is established, it then also needs to be made "public". Defined as an "indeterminate" and "fairly large number" of recipients,[83] this requirement does contain a de minimis threshold that rules out groups of persons that are too small or insignificant,[84] and the threshold filters out communications that are "private," i.e., within a circle of family or friends.[85]

Arguably, offering for sale an NFT on an NFT platform would assume a sufficiently large enough public.[86] However, if the communication at issue concerns the same work as covered by the initial communication and is made using the same technical means as the initial communication (e.g. performed on the internet) it is necessary to determine, not whether the communication at issue qualifies as a communication to the public, but rather whether such communication is to a "new public," by which the CJEU intends a public not considered by the relevant rightsholder when they authorised the initial communication.[87]

[79] Case C-597/19 *Mircom*, EU:C:2021:492.
[80] *Renckhoff* (n 69) 20; Case C-610/15 *Stichting Brein v. Ziggo BV*, EU:C:2017:456, 19; Case C-527/15 *Stichting Brein* (Filmspeler), EU:C:2017:300, 36; *GS Media* (n 75) 27; *Svensson* (n 75) 19.
[81] *Mircom* (n 79) 47.
[82] A. Guadamuz (n 1); B. Bodo (n 1); H. Brorsen (n 3).
[83] *GS Media* (n 75) 36.
[84] Case C-135/10 *SCF*, EU:C:2012:140, 84; *Reha Training* (n 75) 43.
[85] *SCF* (n 84), 86; *Reha Training* (n 75) 43.
[86] H. Brorsen (n 3).
[87] E. Rosati, (n 42) 170.

Clearly, minting an NFT is a different technical means to the creation of a physical painting. But, is minting an NFT of a pre-existing digital image already available on the internet the same "technical means" as the initial communication, as both are performed on the internet? If so, then the question has to be whether there is a communication to "new public," i.e., one not considered by the rightsholder?

This was confirmed in *SBS* where it was stated that "every transmission or retransmission of work which uses a specific technical means must, as a rule, be individually authorised by the author of the work in question."[88] It has been argued that this approach is meant to safeguard new technological avenues of exploitation with economic significance for rightsholders,[89] something that could certainly be held to be the case with an unauthorised NFT, which by its nature is an exploitation of a work not authorised by the rightsholder. In *Renckhoff*, the CJEU found that even though a photograph was freely available on the internet, the reposting of that photograph on a new platform, so using the same technical means, involved the communication to a public not taken into account by the rightsholder, so a "new public."[90]

So, if minting an NFT is a new technical means then no there is no need for a "new public," but, even if it is the same technical means then arguably the communication is being made to a new public not taken into account by the rightsholder,[91] as it is a new avenue of exploitation and one not considered or authorised by the rightsholder?

This leads us on to how, in parallel, the CJEU sometimes refers to the profit-making nature or purpose of the communication, either as a stand-alone third condition or as an integral part of the "new public" analysis.[92] Again, as NFTs are created for financial gain, this is something that is clearly present with an unauthorised NFT and which supports the argument for a finding of infringement of communication to the public.

However, neither this third criterion of the requirement for a profit-making nature, nor the factors mentioned under each of the essential conditions are per se determinative of the

[88] Case C-325/14 *SBS Belgium*, EU:C:2015:764, 17; Case C-265/16 *VCAST*, EU:C:2017:913, 48-49.
[89] J.P. Quintais (n 68), 392; M. Leistner, 'Europe's Copyright Law Decade: Recent Case Law of the CJEU and Policy Perspectives' (2014) 51 Common Market L.Rev 559, 569-572.
[90] *Renckhoff* (n 69) 29-30.
[91] ibid 29-30.
[92] J.P. Quintais (n 68) 388.

qualification of the right. Instead, they are classified as "complementary" and "interdependent",[93] i.e., "those criteria may, in different situations, be present to widely varying degrees, [and] they must be applied both individually and in their interaction with one another."[94] The Court talks about the need for "individual assessment" of the concept of communication to the public,[95] i.e., case by case multi-factor analysis.[96] Determination of whether a certain act falls within Art 3 therefore requires an individual assessment.[97]

However, on the basis of the above discussion, on balance the minting of an unauthorised NFT is a breach of the exclusive right of communication to the public. If a different technical means is used, then there is no requirement for a "new public". However, even if held to be the same technical means then as a new avenue of exploitation, an unauthorised NFT would be communicated to a "new public" not considered by the rightsholder.

2.2.3 "New public" and the Hyperlinking Judgements

As discussed above, a communication concerning the same works as those covered by the initial communication, but made using the same technical means must be directed to a "new public,"[98] and a requirement of a new public means considering the issue of "hyperlinks." In *Svensson* the CJEU held that the provision of hyperlinks to protected works published without any access restrictions on another website affords users direct access to those works, and therefore amounts to an "act of communication."[99] However, the Court found that the unlicensed hyperlink to a work lawfully and freely accessible on a third-party website does not fall within Art 3(1). This is because the public targeted by the initial communication consists of all potential visitors to the site concerned. As such, the hyperlink would not communicate the work to a public not considered by the relevant rightsholder at the time of authorising the initial communication, and no new authorisation from the rightsholder was required.[100] So, if there is no "new public" there is no liability.[101] This approach was confirmed in *Bestwater,*[102]

[93] *SCF* (n 84) 79; *Reha Training* (n 75) 35; *GS Media* (n 75) 33-34; Case C-610/15 *Stichting Brein v. Ziggo BV*, EU:C:2017:456, 25.
[94] *GS Media* (n 75) 34.
[95] ibid 33.
[96] J.P. Quintais (n 68) 388.
[97] Case C-426/21 *Ocilion IPTV Technologies*, EU:C:2023:564, 56.
[98] E. Rosati (n 42) 181
[99] *Svensson* (n 75).
[100] ibid 27-28.
[101] E. Rosati (n 42) 181.
[102] Case C-348/13 *Bestwater*, EU:C:2014:2315.

which confirmed that the legal qualification turns on whether the linked to work is freely accessible, rather than on the type of link, (i.e. deep link, framing, embedded),[103] and adopted in *VG Bild-Kunst*.[104]

So, following *Svensson* if an NFT includes a link to a digital artwork that is freely accessible on the internet and without access restrictions, then this may not suffice as a communication to a "new public," as the public targeted by the initial communication consists of all potential visitors to the site concerned. However, the outcome is different if the link allows users to circumvent a restriction.[105] This would be sufficient to reach a "new public," i.e., a public not targeted by the initial communication,[106] and such a link would be restricted by copyright.[107] The circumventing link is a separate act of communication, characterised by an intervention of the linker that is essential to reach a new public.[108]

GS Media tackled the question of hyperlinks to unauthorised content, and the CJEU clarified that *Svensson* applied to hyperlinks to works that were posted unlawfully, but added a number of objective and subjective factors.[109] The Court held that the provision of a hyperlink to a protected work that is freely accessible, but which was initially published without the rightsholder's consent on another website does not constitute a communication to the public unless the link provider is seeking financial gain and acts with knowledge that such work has been published without a licence from the relevant rightsholder. [110] An individual assessment is in any event required.

GS Media has been criticised for creating a conceptual overlap between intervention and the requirement for a new public, and tainting the right of communication with subjective elements such as knowledge and financial motive.[111] However, it does mean that such subjective elements, in particular financial gain, could be found in the minting of an NFT, should it contain a link to unauthorised content, thereby further strengthening the argument for a finding of infringement.

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[103] ibid 16-19.
[104] Case C-392/19 *VG Bild- Kunst*, EU:C:2021.
[105] *Svensson* (n 75) 31; *VG Bild-Kunst* (n 104).
[106] J.P. Quintais (n 68) 393.
[107] *Svensson* (n 75) 31.
[108] J.P. Quintais (n 68) 393.
[109] P. Goldstein & P. Bernt Hugenholtz (n 14) 314.
[110] *GS Media* (n 75) 55.
[111] P. Goldstein & P. Bernt Hugenholtz (n 14) 314.

2.2.4 Is the Link a Distraction?

The literature considers the issue of unauthorised NFTs as infringement of the right of communication to the public, detailing the steps required in minting an NFT and focusing on "linking".[112] It concludes that in order to find liability an NFT needs to include a hyperlink to a protected work posted elsewhere without the permission of the rightsholder, with the caveat that if the link is to content already publicly available on the internet then it is possible that there is no actual infringement.[113] Authors also make the point that if an NFT does not include a link to an underlying artwork, or if the link in some way does not qualify i.e., it is obscured then there is no infringement, and the mere posting of metadata probably does not in itself qualify as a communication to the public, as the metadata itself is not per se copyrightable.[114]

However, this leads to an increasingly technical discussion leading to numerous outcomes, depending on how an NFT is minted and what, if anything, it links to. This creates legal uncertainty, consumer confusion and the focus on a link within and NFT assumes that an NFT contains a link to the tokenised work. Given developments in technology, and with the advent of Ordinal NFTs, this increasing looks less likely to be the case. Ordinal NFTs offer the ability for users to directly inscribe data into an NFT, so crucially – there is no link. For example, Bitcoin Ordinals allow users to embed data such as digital images onto Satoshis, Bitcoin's smallest unit.[115]

Svensson reinforced the concept of a "new public" in defining the notion of "act of communication to the public," to make sure that hyperlinking in principle does not qualify as an exploitation of a work.[116] On the contrary, and as recently clarified in *Renckhoff*,[117] the reposting of a protected work can be an act of communication to the public, meaning that whereas there is an argument that an NFT containing a hyperlink to a protected work freely accessible on the internet is not an infringement of communication to the public, this "defence" would not be available for an Ordinal NFT in which a work is embedded and which effectively reposts the freely accessible protected work.

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[112] B. Bodo (n 1), 278 ; A. Guadamuz (n 1); H. Brorsen (n 3).
[113] H. Brorsen (n 3).
[114] B. Bodo (n1) 278, A.Guadamuz (n 1) 15.
[115] Leah, 'Bitcoin NFTs Sealed 2023 with Record-Breaking Sales' (*NFTplazas.com,* 2 January 2024) https://nftplazas.com/bitcoin-nft-sales/.
[116] I. Kunda, 'Hyperlinking to copyright works in the EU: finding a weak link' in *The Future of IP* D.J. Gervais (ed) (Elgar 2021) 257.
[117] *Renckhoff* (n 69).

In his opinion in *VG Bild-Kunst*, and in an attempt to reconcile *Svensson* with *Renckhoff,* AG Szpunar advanced a new reading of the case-law relating to hyperlinks, noting that when a work is made freely accessible on a website the public that the rightsholder has in mind is not the generality of internet users, but rather visitors of that website. [118] Not formally adopted by the Grand Chamber, but argued by E. Rosati, it appears that the concept of a "new public" need not be regarded as a requirement in cases where the one at issue is a new act of communication, i.e. an act of exploitation independent of or additional to any initial act of communication by the rightsholder.[119] If there is a distinct act of exploitation, it should be irrelevant whether the technical means for the initial and latter communication is the same or different, and whether the public targeted by said act is also new. So, and as argued by E. Rosati, the concept of "new public" may not be as key as initially conveyed. [120]

Such an approach could potentially cover the unauthorised minting of an NFT, however minted, and overcome the problem of "the link".

The point here is that the law cannot keep up with the technology, which is still developing at pace, and with the possibility that the "killer app" has yet to emerge. The argument needs to be that in order to foster development and legal certainty, and as with the reproduction right, any policy or legal development needs to focus on the functional and economic impact of the exploitation of a work on a rightsholder, rather than technical definitions.[121]

2.2.5 Making Available in the US

In contrast to the EU, which adopted a new Communication to the Public right, the US took the position that the existing exclusive rights under the US Copyright Act 17 USC §106 (in particular rights of reproduction, distribution, public display and public performance) were sufficient to comply with the WCT's making available right and that no changes to the statute were needed.[122]

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[118] Opinion of AG Szpunar in *VG Bild Kunst*, C-392/19, EU:C:2020:696, 73.
[119] E. Rosati (n 42) 177.
[120] E. Rosati, 'When does a communication to the public under EU Copyright law need to be to a new public?' (2020) 45(6) E.L.Rev. 802, 821-2.
[121] C. Sganga (n 15) 3.
[122] USCO, *The Making Available Right in the US* (February 2016) https://copyright.gov/docs/making_available/making-available-right.pdf 2.

The US Copyright Act grants an exclusive right to display, and to authorise others to display, publicly inter alia any "pictorial, graphic or sculptural works, including the individual images of a motion picture or other audio visual work."[123] The act defines "display" as "to show a copy of it, either directly or by means of a film, slide, television image, or any other device or process or, in the case of a motion picture or other audiovisual work, to show individual images non-sequentially."[124] The display right encompasses showings of both an original work (either directly as in an exhibition, or indirectly as by showing on television) and of reproductions of the work, such as by summoning stored text from a database to a computer screen or by projecting individual images on a screen.[125] In terms of displaying a work "publicly", transmission to individual members of the public is encompassed by the second branch of the definition of to perform or display a work publicly, "by means of any device or process, whether the members of the public capable of receiving the performance or display receive it in the same place or in separate places and at the same time or at different times."[126]

On the face of it, the minting of an unauthorised NFT could be a breach of this relatively broad exclusive right.[127] In terms of linking, courts in the US divide on liability for online linking under the public display right.[128] One approach, known as the "server test", holds that, "the owner of a computer that does not store and serve the electronic information to a user is not displaying that information, even if such owner in-line links to or frames electronic information."[129] The alternative approach rejects the server test for improperly collapsing the display right into the reproduction right with the court finding that, "The Copyright's Act's authors intended to include each and every method by which images…comprising a… display are picked up and conveyed" and going so far as to note that an infringement of the display right could occur "if the image were transmitted by any method."[130] So, for example by a computer system from one place to a member of the public elsewhere. It is likely that as NFT platform are commercial marketplaces, any fair use argument regarding the provision of a link would likely fail, further supporting the implication of the public display right.[131]

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[123] 17 USC §106(5).
[124] 17 USC §101.
[125] P. Goldstein & P. Bernt Hugenholtz (n 14) 307.
[126] 17 USC §101.
[127] USPTO & USCO (n 13) 20.
[128] P. Goldstein & P. Bernt Hugenholtz (n 14) 315.
[129] *Perfect 10, Inc. v. Amazon.com, Inc*., 487 F.3d 701 (9th Cir. 2007).
[130] *Goldman v Breitbart News Network, LLC*, 2018 U.S. Dist. Lexis 25215 (S.D.N.Y. 2018).
[131] USPTO & USCO (n 13) 20.

2.2.6 Summary

It is the conclusion of this section that it may be possible to argue that the minting of an unauthorised NFT is an infringement of the right of communication, but the mental gymnastics to arrive at this conclusion are challenging and the outcome by no means certain. The position in the US, as with the reproduction right above, does, on the face of it seem more straightforward with a more likely finding of infringement.[132]

2.3 Right of Distribution

The third economic right to be considered is the exclusive right of distribution. Art 4(1) InfoSoc provides that authors, in respect of the original of their works or of copies thereof, shall have the exclusive right to authorise or prohibit any form of distribution to the public by sale or otherwise. In the US, 17 USC §106(3) grants the exclusive right to distribute "copies or phonorecords of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease or lending". However, as discussed in the previous Chapter 8, and provided for by the WCT the right of distribution requires a transfer of ownership, and only applies to fixed copies that may be put into circulation as tangible objects.[133]

Chapter 8 concludes with how NFTs can meet both of these conditions, meaning that it is possible to consider the right of distribution in relation to the minting and sale of NFTs. NFTs are capable of transfer of ownership, and being classified as tangible articles, meaning that not only could distribution apply to the sale of NFTs, overcoming the problem of lack of digital exhaustion, but any infringement action brought by a rightsholder for an unauthorised NFT could rely on infringement of the distribution right.

2.3.1 Position Within the EU

Art 4(1) InfoSoc provides for Member States to "provide for authors, in respect of the original of their works or copies thereof, the exclusive right to authorise or prohibit any form of distribution to the public by sale or otherwise." The EU *acquis* does not define "distribution",[134] but the CJEU has interpreted it broadly, in accordance with the high level of

[132] ibid.
[133] WCT Art 6; WCT Agreed Statements (n 18) Concerning Articles 6 and 7.
[134] E. Rosati (n 42) 198.

protection afforded by InfoSoc,[135] to include acts of advertising and offering copyright protected objects for sale,[136] and has held that reference should be made to the WIPO treaties to further understand the meaning.[137]

The WCT introduced a broad distribution right for literary and artistic works, providing that, "Authors of literary and artistic works shall enjoy the exclusive right of authorising the making available to the public of the original and copies of their works through sale or *other transfer of ownership.*"[138] Hence, the right under InfoSoc Art 4 (1) should be intended as encompassing forms of distribution which entail a transfer of ownership.[139] Equally, according to an Agreed statement concerning the WCT, the expressions "copies" and "original and copies" refer exclusively to fixed copies that can be put into circulation as tangible objects.[140]

So, in the EU, distribution entails the transfer of ownership of a tangible object. The question is whether an unauthorised NFT infringes the distribution right? Does the minting and selling of an unauthorised NFT entail the transfer of ownership, and is an NFT a fixed copy of a protected work that can be put into circulation as a "tangible object"? This research concludes that these questions can be answered in the affirmative, with the conclusion therefore meaning that the transfer of ownership, i.e. sale of an unauthorised NFT may be an infringement of the distribution right.

This research recommends how courts and policy makers in the UK, EU and US should adopt a functionally equivalent and technologically neutral approach when interpreting the law in relation to the application of NFTs. Applying such an approach in a case on royalites, the Supreme Court of Canada in its judgment stressed how, "where a novel technology emerges that has no clear traditional equivalent […] courts must look to what the new technology does to the substance of the work by examining which, if any, of the copyright interests are engaged

[135] InfoSoc Recitals 9-11; Case C-516/13 *Dimensione Direct Sales & Labinaca*, EU:C:2015:315, 34; Case C456/06 *Peek & Cloppenburg*, EU:C:2008:232, 37.
[136] Case C- 5/11 *Donner*, EU:C:2012:370; *Dimensione Direct Sales & Labinaca* (n 135).
[137] *Peek & Cloppenburg* (n 135).
[138] WCT Art 6(1)
[139] *Peek & Cloppenburg* (n 135) 29-33.
[140] WCT Agreed Statements (n 18) Considering Articles 6 and 7.

by this new method of distributing a work."[141] The Court emphasised how, "what matters is what the user receives, not how the user receives it."[142]

Empirical research in this thesis supports the requirement to consider NFTs as functionally equivalent to an IRL physical painting; given the perception by users of sale and ownership, (Chapter 7 §2.1) and the reliance on secondary markets (Chapter 7 §2.4). Equally, a technologically neutral approach, which would focus on the NFT that a user receives, rather than how it is minted, would allow for further developments in technology, the different types of NFTs and the different methods that may be used to mint an unauthorised NFT.

Finally, given the complexity of the CJEU body of case law, the reliance on and the application of the communication right to infringement cases leads to legal complexity and uncertainty and confusion on the part of an author when enforcing their rights, and hinders the development of business models.[143] Given how an NFT is functionally equivalent to an IRL physical painting in terms of the perceptions of the users and application in practice, it follows that in order to provide a high level of protection for authors required by InfoSoc,[144] an author should be able to rely on the distribution right, as they would IRL with a physical painting, if and when a third party mints and offers for sale an unauthorised NFT.

2.4 Summary of Economic Rights

As discussed in the previous Chapter 8, this thesis recommends that the minting and sale of CryptoArt NFTs, as personal property, tangible CryptoTokens to which a protected work is fixed and CryptoAssets, be subject to the exclusive right of distribution.

Failing a technological neutral interpretation, the law in relation to an action for infringement of reproduction is potentially inconclusive, and as we have seen in this Chapter the case law surrounding communication to the public is increasingly complex, leading to an inconsistent technological and global outcome. In terms of harmonisation, legal certainty and to achieve the high level of protection for authors required by InfoSoc,[145] this thesis recommends that

[141] *Society of Composers, Authors and Music Publishers of Canda v. Entertainment Software Association*, 2022 SCC 30, 70.
[142] ibid 63.
[143] P. Mezei, 'Hop on the Roller Coaster – New Hopes for Digital Exhaustion?' (2022) 71(11) GRUR International, 1017 https://ssrn.com/abstract=4256645.
[144] InfoSoc Recitals 9-11.
[145] ibid.

creators of digital should be able to enforce their exclusive right of distribution in relation to unauthorised NFTs.

However, given the confusing landscape of economic rights, when considering protecting their rights, a creator may look to enforce their moral rights, either instead of or in addition to an action for infringement of economic rights.

3. Moral Rights

Justified by the personality theory, as discussed in Chapter 11, moral rights protect the personal connection between an author and their work, and the unauthorised minting of an NFT may infringe an artist's moral rights.[146]

Derived from the continental European tradition, moral rights historically allowed an author to safeguard the provenance of their work, as well as their personality and reputation.[147] However, by the twentieth century the European civil law countries pushed for the adoption of moral rights within the international arena and the Berne Convention adopted the de minimis threshold of the rights of attribution (paternity) and integrity providing that, independently of an author's economic rights, and even after the transfer of said rights, an author shall have the right to claim authorship to a work and to object to any distortion, mutilation or other modification of, or other derogatory action in relation to the said work, which would be prejudicial to his honour or reputation.[148]

The right to claim authorship grants an author of a work the prerogative to assert that they are its creator.[149] An example of a violation of the right may occur if for example, an unauthorised NFT is created of an author's work, without naming or providing any credit to the author.[150] Alternatively, an author may wish to prevent another from adding their name to a work that they never in fact created, and the right can even be used negatively i.e. to protect a pseudonym or anonymity.[151]

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[146] L. Helman & O. Tur-Sina, 'Bracing Scarcity: Can NFTs Save Digital Art?' (5 March 2023) Fla.St.U.L.Rev, Forthcoming https://papers.ssrn.com/sol3/Papers.cfm?abstract_id=4378570 33.
[147] G. Dutfield & U. Suthersanen (2020) (n 5)128.
[148] Art 6 bis (1) Berne Convention (introduced into the Convention in Rome in 1928).
[149] WIPO, *Guide to the Berne Convention* (Geneva 1978) https://www.wipo.int/edocs/pubdocs/en/copyright/615/wipo_pub_615 para 6bis.3.
[150] L. Helman & O. Tur-Sina (n 146) 33.
[151] WIPO (n 157) para 6bis.3.

The Convention confirms that the means of redress shall be governed by the legislation of the country where protection is claimed, leading to a lack of harmonisation within the EU.[152] However, although understood to be more strongly protected in civil law countries, with their deference to author's natural rights as opposed to a more common law utilitarian approach, moral rights have also developed in common law countries such as the UK and US and, although specifically excluded in the TRIPS Agreement,[153] the WIPO treaties do adopt the two moral rights of attribution and integrity.[154]

Given the lack of harmonisation within the EU, this section will give a brief overview of moral rights in the UK in addition to the US, before commenting specifically on their application to NFTs.

3.1 Moral Rights in the UK

The CDPA provides for discrete rights of paternity, integrity and protection against false attribution.[155] Provided that an author of an artistic work has asserted their moral rights in accordance with CDPA Art 78, they have the right to be identified as the author of that work whenever it is published commercially or exhibited in public, or where a visual image is communicated to the public.[156] An artist would therefore may be able to enforce such a right, should an unauthorised unnamed or misnamed NFT of their work be minted.

Regarding the integrity of a protected artistic work, an author has the right not to have their work subject to derogatory treatment,[157] where "treatment" means any addition to, deletion from or alteration to or adaption of the work,[158] and the treatment is derogatory if it amounts to distortion or mutilation of the work, or is otherwise prejudicial to the honour or reputation of the author.[159] In the case of an artistic work, the right is also infringed by a person who publishes commercially or exhibits in public a derogatory treatment of the work, or

[152] Art 6 bis Art 3 Berne Convention (introduced into the Convention in Rome in 1928).
[153] Trips Art 9(1).
[154] WCT Art 3; WPPT Art 5.
[155] CDPA s 77-89.
[156] CDPA s 77(4)(a).
[157] CDPA s 80 .
[158] CDPA s 80(2)(a).
[159] CDPA s 80(2)(b).

communicates to the public a visual image of a derogatory treatment of the work.[160] This right may apply should an artist's work be altered in anyway and subsequently minted as an unauthorised NFT. Equally, an artist may choose not to be associated in any way with NFTs and consider the minting of such an NFT as prejudicial to their reputation.

Finally, an artist has the right not to have an artistic work falsely attributed to him as an author.[161] It is not unforeseeable in the world of NFTs that someone may mint an NFT in the style of for example Banksy, thereby falsely attributing Banksy as an author, and potentially generating an infringement of the moral right of false attribution.

3.2 Moral Rights in the US

The US has resisted a literal incorporation of moral rights into its domestic copyright law. In order to ensure compliance with the Berne Convention,[162] it instead relies on a mix of derivative rights, unfair competition, defamation and privacy to approximate moral rights,[163] and the economic right to prevent the creation of derivative works can to some degree serve as a surrogate for the right of integrity.[164] Courts in the US will enforce contracts (so obligations in a licence to attribute a work to its author) but will not imply such rights if not present.[165]

Notwithstanding the above, after joining the Berne Convention in 1989, the US Congress passed the Visual Rights Act 1990 (VARA) which added a provision to the Copyright Act, granting rights of attribution, integrity and destruction to "works of visual art".[166] It equates works of visual art with works of fine art, defining them as works that exist in only a single copy or in a limited edition of 200 copies or fewer, that are signed and consecutively numbered by the author.[167]

Regarding the right of attribution and the right to claim authorship,[168] an artist could, and provided their artwork met the definition of a "work of visual" art, claim authorship of that

[160] CDPA s 80(4)(a).
[161] CDPA s 84(1)(a).
[162] G. Dutfield & U. Suthersanen (2020) (n 5) 130.
[163] P. Goldstein & P. B. Hugenholtz (n 14) 388.
[164] ibid 339.
[165] ibid 341.
[166] 17 USC §106A.
[167] 17 USC §101.
[168] 17 USC §106A (a)(1)(A).

work should an unauthorised NFT of their work be minted without any attribution. Equally, the author of a work of visual art has the right to prevent the use of his or her name as the author of any work of visual art that they did not create,[169] or in the event of any "distortion, mutilation or other modification of that work" which may be prejudicial to their honour or reputation.[170] Relatedly, as part of integrity, an author can prevent any "intentional distortion, mutilation or modification of that work which would be prejudicial to his or her honour".[171]

3.3 Summary of Moral Rights

Until confirmed by the courts, we cannot say for certain whether moral rights could be protected in the circumstances suggested above. However, it follows from the Berne Convention and the above discussion that should an author be able to demonstrate that their protected work has been used to mint an unauthorised NFT that neither names or credits them as the author, such action may be considered a violation of the right of attribution.

Equally, in the event that an artist is credited for a work, they may wish to prevent the use of their name if any modification or adaptation of the work is prejudicial to their reputation. The minting of NFTs has raised questions relating the sustainability and ethics of the NFT market, and the commodification of art.[172] Together with their speculative and technologically challenging nature, an artist may prefer to not be associated in any way with NFTs,[173] and the minting of an unauthorised yet credited NFT may damage their reputation.

4. Recent Developments and Commentary

It is hard to argue how, from a policy point of view, the minting of an unauthorised NFT is not copyright infringement, but until we have definitive case law or a change of policy this cannot be confirmed from a legal position. However, again it is hard to see how a case of infringement would not be found if a user knowingly mints an NFT using an artwork to which they do not own the rights, and with the intention of personal gain. Empirical research demonstrates that this is the approach that the platforms themselves take, and is the perception they give to their users (Chapter 7 §3).

[169] 17 USC §106A (a)(1)(B).
[170] 17 USC §106A (a)(2).
[171] 17 USC §106A (a)(3)(A).
[172] L. Helman & O. Tur-Sina (n 146) 34.
[173] ibid 33.

As also discussed in Chapter 3 §4.4, we are beginning to see some cases (mostly from the US) in the NFT space although, none (except for, as discussed below, the Chinese case *Bigverse,*[174] and a case brought against Mango by the Spanish copyright society, VEGAP.[175]) has covered copyright infringement in relation to NFTs. However, it has been noted how US courts in particular are prepared, in relation to trademarks, to apply traditional IPR enforcement rules to NFTs.[176] UK legal policy has also been seen to be relatively pragmatic when considering issues of smart contracts,[177] and digital assets.[178] The High Court held that Bitcoin and other cryptocurrencies can be considered property under English law and therefore subject to an injunction,[179] and clarified that there is, "at least a realistically arguable case" that NFTs can be treated as legal property under English Law.[180] Similarly, the Singapore High Court has recognised NFTs as protectable digital assets and a form of legal property.[181] Both of these latter decisions indicate how in practice the ownership of the token itself will be transferred to the purchaser in an NFT transaction.[182] The position within the EU generally is not so clear. Whilst the new MiCA regulations do not technically cover NFTs, this is not to say that NFTs may not become an area of future focus for the EU regulators. [183]

In China, the Hangzhou Court explored the challenges to NFT regulation in *Bigverse*, the first NFT-related case in China.[184] The case involved an unauthorised NFT which had been minted on the NFT marketplace, *Bigverse*. The plaintiff brought a case against *Bigverse*, alleging that *Bigverse* was liable for its user's infringing act. So, although primarily involving platform liability (see the following Chapter 10) the case also raised questions regarding the nature of NFTs and NFT transactions.[185] The Court identified NFTs as virtual property, with the rights

[174] *Bigverse* (n 34).
[175] A. Cerri, 'Spanish Court finds that virtual exhibition of NFTs based on paintings is harmless use' (*IPKat,* 20 February 2024) https://ipkitten.blogspot.com/2024/02/spanish-court-finds-that-virtual.html; Juzgado de lo Mercantil no 09 de Barcelona, No de Resolucion: 11/2024 (*Mango*).
[176] *Hermes Int'l v. Rothschild*, 590 F. Supp. 3d 647, 650 (SDNY 2022); *Yuga Labs, Inc. v. Ripps*, 2:22-cv-04355, (C.D.Cal.).
[177] UKJT, *Legal Statement on Cryptoassets and Smart Contracts* (November 2019) https://technation.io/wp-content/uploads/2019/11/6.6056_JO_Cryptocurrencies_Statement_FINAL_WEB_111119-1.pdf.
[178] Law Commission, *Digital Assets: Final Report* (HC 1486, Law Com 412, June 2023).
[179] *AA v. Persons Unknown* [2019] EWHC 3556 (Comm)
[180] *Lavinia Deborah Osbourne v Persons Unknown, Ozone* [2022] EWHC 1021 (Comm)
[181] *Janesh s/o Rajkumar v. Unknown Person ('Chefpierre")* [2022] SGHC 264
[182] B. Xiao, 'Copyright Law and NFTs: experience from China' (2022) 30 Int. J. Inf. Technol. 444-471, 453.
[183] MiCA, Recital 10.
[184] *Bigverse* (n 34) 18.
[185] B. Xiao (n 182) 459.

and interests in NFTs equivalent to property ownership, rather than a licence to use.[186] They held that the right of reproduction may be violated in the minting process, as the process of uploading a work to mint an NFT involves making copies of the original work.[187] However, they found that technically there is no reproduction in the minting process itself. They continued by saying that ownership of the tokenised digital work was transferred in the sale of an NFT, but held that the transaction constituted an act of information network transmission rather than of distribution, as distribution under Chinese law is limited to the transfer of ownership of tangible copies of works, but as the damage caused by the reproduction had been absorbed by the transmission, there was no need to evaluate this separately.[188] The Court followed the theory of doctrine of exhaustion developed in prior cases, deciding that the doctrine of exhaustion does not apply to NFT transactions.[189]

So, arguably the correct result, in that they did find that copyright infringement had occurred, but with questionable reasoning.[190] Whilst the Court held that a transfer of ownership of property had taken place, the finding of infringement was based on the Chinese equivalent to the exclusive right of communication to the public.

Issues from this case remain unresolved and unaddressed,[191] and explanations were less extensive than Western observers would expect, and probably may be disputed from the technical assumptions presented.[192] The Court seemed to not understand the nature of NFTs as at one point in the judgment they state that:

> *"..if the NFT digital works can be copied without cost and limitation on quantity, even if a subject legally obtains the NFT digital works copy, it is difficult to control the potential number of files available for subsequent distribution, which is against the intention of the distribution right system and is unfair to copyright owners."*[193]

This overlooks the scarcity value of an NFT, and how there can only exist one NFT, and this is better considered a defence for infringement of digital works rather than NFTs.[194] An NFT

[186] ibid 459.
[187] *Bigverse* (n 34) 18.
[188] ibid 20.
[189] ibid 20.
[190] T. Pattloch, 'Clearing the way by Chinese courts?' (*TaylorWessing.com*, 20 June 2022) https://www.taylorwessing.com/en/insights-and-events/insights/2022/06/clearing-the-way-by-chinese-courts.
[191] B. Xiao (n 182) 460.
[192] T. Pattloch (n 189).
[193] *Bigverse* (n 34) Part V(iii).
[194] B. Xiao (n 182) 463.

cannot be copied, even if the underlying work can be, and such assumption might have guided the court in its understanding that a key point of the judgment, namely the upload and sale of a NFT, revolved around communication rather than distribution.[195] Whilst of no authority, this case does demonstrate the complexities in understanding and applying the law, albeit Chinese law, to the novel impact of NFTs.

Turning to the case brought against Mango in Spain by VEGAP, Mango owned five paintings and VEGAP unsuccessfully brought an action for copyright infringement when Mango created five NFTs from the paintings that it owned.[196] The court did find that a communication to the public had occurred and that Mango had adapted the original artworks. However, Mango was able to rely on the defence that it had the right to display the paintings that it owned, that no moral rights had been infringed and that the use was "harmless", such that authorisation of the rightsholders was not required. Whilst the correct decision,[197] had Mango intended to make commercial use of the NFTs, the outcome may well not have been the same.

5. Conclusion

This Chapter discusses which exclusive right is infringed by the minting of an unauthorised NFT: reproduction, communication to the public or distribution? How might a Court approach the issue? In *Renckhoff* the CJEU, rather than considering both the right of reproduction and the right of communication to the public, focused on the latter, thereby concentrating on the most impactful right and avoiding a separate analysis of each.[198] However, Hugenholtz and Kretschmer argue how the rights of reproduction, communication to the public and distribution have become disordered and how, as a consequence, the scope of copyright protection in the EU has become increasingly difficult to predict, at the expense of legal certainty.[199] As a result, and as evidenced by the gap between copyright law and the NFT platforms, the natural link with economic exploitation has been lost, causing a growing disconnect between the scope of protection with economic and technological realities.

[195] T. Pattloch (n 190).
[196] *Mango* (n 175)
[197] A. Guadamuz, 'Barcelona court rules in favour of defendant in NFT metaverse copyright case' (*Technollama,co.uk,* 4 February 2024) https://www.technollama.co.uk/barcelona-court-rules-in-favour-of-defendant-in-nft-metaverse-copyright-case.
[198] B. Faturoti (n 69).
[199] P. Bernt Hugenholtz & M. Kretschmer, 'Reconstructing rights: Project Synthesis and Recommendations' in P. Bernt Hugenholtz (ed), *Copyright Reconstructed* (Wolters Kluwer, 2018) 2.

At the international level the core economic rights are harmonised only to a limited extent. The main international treaties (Berne Convention, TRIPs Agreement, WCT) leave contracting states considerable freedom to implement and interpret the economic rights as they see fit. Consequently, definitions and interpretations differ between, for example, the EU and the US.[200] This is particularly vexing in a networked world where acts of usage of copyright works almost inevitably occurs on a global scale. The main economic rights are crafted too formalistically, and require (more) normative anchoring.[201] This is true for the reproduction right in its present, largely technical, definition and the right of communication to the public, which due to its very abstract wording is similarly disconnected from any impact on the market.[202]

Both this Chapter, and the previous Chapter 8 which discusses rights, highlight how a different approach is needed in order to provide legal certainty for NFTs, and to bridge the gap between the law and what is happening in practice.

Gervais suggests how an emphasis should be given to the effect of the use of a protected work, as opposed to its technical nature; an approach that also has the advantage of being technically neutral.[203] Such a practice would provide much-required clarity in the highly fragmented corpus of economic rights.[204] Authors have also emphasised that it is necessary to "more directly connect copyright protection to market-relevant acts of exploitation".[205] Ivana Kunda argues that in the EU, in relation to the right of communication to the public in the hyperlinking context, the position will not be fixed simply by the CJEU exercising its interpretative function. Instead, the comprehensive integration of both the realities of digital markets and the functions of copyright into the system architecture is required to open new avenues for the long needed and strongly advocated recreation of copyright in the EU.[206]

This thesis recommends how a CryptoArt NFT, however minted, should be treated as a tangible CryptoToken within which a protected work is incorporated. This would be a technologically

[200] P. Goldstein & P. Bernt Hugenholtz (n 14) 366.
[201] P. Bernt Hugenholtz & M. Kretschmer (n 199) 7.
[202] ibid 7.
[203] D.J. Gervais, (*Re)structuring Copyright: A Comprehensive Path to International Copyright Reform* (EE 2017) 207-15, 211.
[204] B. Faturoti (n 69).
[205] I. Kunda, 'Hyperlinking to copyright works in the EU: Finding a weak link' in D.J. Gervais (ed), *The Future of IP* (EE 2021) 254-274; P. Bernt Hugenholtz & M. Kretschmer (n 199) 8.
[206] I. Kunda (n 205).

neutral, purpose based position in that it would not matter how the NFT is minted, but instead would look to the use of the protected work as an exploitation. It would take account of any future technical innovation, e.g. Ordinal NFTs, and overcome any issues and inconsistencies either with relying on reproduction or navigating the complexities with hyperlinking and communication to the public.

Such a step would permit the application of the distribution right, which would reflect far better the functional equivalence of CryptoArt to a physical IRL painting, and the practice of the platforms. A purpose led, normative and technologically neutral application of the distribution right would reduce complexity and be a considerable improvement to the current fragmented rights based approach which is based on the technical uses of copies of works.

It remains to be seen what approach will be adopted by courts and policy makers. However, it would be an opportunity to adopt a pragmatic, normative - rather than technical – approach to infringement, to include within the economic rights those actions that have a functional and economic impact on rightsholders, rather than relying on technical definitions.[207] Such an approach is necessary to level the playing field between digital and IRL artists, bridge the gap between the law and the practice, and to ensure that by retaining control over economically significant uses of their works digital artists are afforded the high level of protection required by the InfoSoc Directive.[208]

This position endorses the view of Sir Geoffrey Vos that:

> *We should try to avoid the creation of a new legal and regulatory regime that will discourage the use of new technologies rather than provide the foundation for them to flourish.*[209]

[207] C. Sganga, (n 16) 3.
[208] InfoSoc, Recitals 9-11.
[209] Sir G. Vos MR, 'CryptoAssets as property?' (2019) https://www.judiciary.uk/wp-content/uploads/2019/05/Sir-Geoffrey-Vos-Chancellor-of-the-High-Court-speech-on-cryptoassets-2.pdf.

Chapter 10: Platform Liability – Are NFT Platforms Liable for the Unauthorised Actions of Their Users?

1. Introduction - Infringement Issues to Consider with NFTs

"From the perspective of copyright liability and infringement, the most significant tensions arise from the dissemination of NFTs on online platform marketplaces. These can give rise to copyright liability and infringement questions for both users and platforms."[1]

The key aspect is enabling rightsholders to enforce their rights. Chapter 9 discusses how a rightsholder might have an action for a claim for direct copyright infringement against a user who mints an unauthorised NFT. Assuming that such an action is available in law, it may not be so straight forward to bring in practice. Possible challenges range from identifying and locating direct infringers, to issues concerning economic efficiency and effectiveness of enforcement efforts.[2] Such issues are particularly relevant with NFTs given the pseudonymity of the minting process, and the costs involved in establishing a location and identity of any infringer. In the absence of any practical or economically viable enforcement route against a direct infringer, the question here is what liability for infringement might be attributed to an NFT platform?

An NFT platform may either be directly/primarily liable for infringement for its own actions, or indirectly/secondarily liable as an online intermediary (hereinafter referred to as an "intermediary") as a consequence of the infringing activities of its users. The literature, case law and terminology is complex and confusing, but this Chapter endeavours to distinguish between the two scenarios. The terms direct/primary and indirect/secondary are used interchangeably in the literature, but the terms direct and indirect will be used here for consistency. In terms of direct liability this Chapter also refers back to Chapter 9, which discusses the direct liability of a user, as there is an overlap between the direct liability of a user with that of an NFT platform.

[1] B. Bodo & Others, 'The Rise of NFTs: these aren't the droids you're looking for' (2022) 44(5) EIPR 265-282, 267.
[2] E. Rosati, 'The Role, Responsibility and Liability of Online Intermediaries Under EU IP Law' Forthcoming in E Rosati – I. Calboli (eds), *Routledge Handbook of Fashion Law* (Routledge, 2024) https://ssrn.com/abstract=4526326, 2.

In terms of indirect infringement, this Chapter analyses the liability of an NFT platform as an intermediary for the illegal actions of its users if, for example, users mint and trade in unauthorised content. It details the safe harbour systems both in the EU and the US that potentially shield a platform from monetary liability for the illegal actions of its users, together with the related notice-and-takedown approaches, and more recently, the transition (at least in Europe) towards a more direct liability regime for online intermediaries, both through the case law,[3] and the adoption of Article 17 of the DSM Directive.[4]

The NFT platforms studied in this research assume reliance on the safe harbour rules in their role as intermediaries, as detailed at length and supplemented in their Terms of Service (ToS). As demonstrated by the empirical evidence in Chapter 7 §4, they all go to great lengths to avoid liability, and it is clearly a matter of import to them all. However, this Chapter discusses how the platforms may not always be able to rely on the protection of the safe harbour rules and/or their ToS, and questions from a policy point of view whether they should be able to "hide" behind such rules and their ToS. Empirical evidence (Chapter 7 §4) clearly demonstrates how the balance is currently tilted too far in favour of the platforms. InfoSoc requires a high level of protection for rightsholders, in order that they may control the exploitation of their works, and to maintain the copyright balance.[5] However, until we have case law or policy guidance, all that can be done is to recommend a course of direction to ensure a higher level of protection for rightsholders than currently exists.

2. Intermediary liability – Safe Harbour Regimes

The law in most countries, under prescribed conditions, imposes indirect liability on those who, though not directly infringing copyright, have materially contributed to the infringement.[6] However, an Agreed Statement to Article 8 WCT (Right of Communication to the Public)[7] became the international norm regarding intermediary liability for user infringement of which

[3] Case C-610/15 *Stichting Brein v. Ziggo BV*, EU:C:2017:456 (*Ziggo)*; Cases C-682/18 & C683/18 *YouTube*, EU:C:2021:503.
[4] Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on Copyright and Related Rights in the Digital Single Market OJ L 130/92 (DSM Directive).
[5] InfoSoc Recitals 9 -11.
[6] P. Goldstein & P. Bernt Hugenholtz, *International Copyright* (4th edn, OUP 2019), 316.
[7] Agreed Statements concerning the WIPO Copyright Treaty 1996.

intermediaries were unaware or over which they had no control.[8] This states that, "the mere provision of physical facilities for enabling or making a communication does not in itself amount to communication within the meaning of this Treaty or the Berne Convention."[9] Subsequent legislative limitations on intermediary liability followed. Initially adopted by the US in the late 1990s,[10] and by the EU in 2000 in the Ecommerce Directive,[11] the "safe harbour" regimes provide for a qualified insulation for online intermediaries from the liability for damages or any other pecuniary remedy that would result from illegal i.e., infringing activities carried out by users of their services.[12] In 2022, the EU adopted the Digital Services Act (DSA),[13] which maintains and modernises the safe harbour rules already found in the Ecommerce Directive,[14] and which came into force on the 17th February 2024.

The DSA maintains the existing exemptions from liability or "safe harbours" under the Ecommerce Directive, with Art 6 DSA providing that intermediaries are not liable for content hosted on their platform, so long as they either do not know that the content is illegal or infringing, or they promptly remove or block access to that content once aware that it is illegal or infringing. Art 8 DSA maintains the no general obligation monitor provision from Art 15 Ecommerce Directive. However, Art 7 DSA clarifies how an intermediary will not lose the benefit of the liability exemptions by virtue of any own-initiative monitoring it carries out. However, if a provider does identify illegal or infringing content via its own-initiative monitoring, it must promptly then remove such content in order to remain within the liability safe harbour.

This Chapter, in terms of legal geography, is relatively broad reaching. Post Brexit, the position in the UK in terms of retained EU law is complex. The UK has not implemented the DSM Directive, and neither is it bound by the recent DSA, which codifies relevant CJEU judgments passed since the Ecommerce Directive in 2000. However, whereas the DSA and the DSM

[8] P. Samuelson (2021), 'Pushing back on Stricter Copyright ISP Liability Rules' (2021) 27(2) MTLR 299-344, 302.
[9] Agreed Statements Concerning the WCT (n 7) Concerning Article 8.
[10] Communication Decency Act of 1996 and the Digital Millennium Copyright Act 1998 (DMCA).
[11] Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market, OJ L 178/1 (Ecommerce Directive)
[12] E. Rosati (n 2) 2.
[13] Regulation (EU) 2022/2065 of the EP and of the Council of 19 October 2022 on a Single Market for Digital Services and amending Directive 2000/31/EC (Digital Services Act) OJ L277/1 (DSA).
[14] M. Husovec, 'Digital Services Act: A Short Primer' (5 July, 2022) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4153796 .

Directive are not "law" in the UK, case law and EU legislation implemented in the UK prior to 31 January 2020, as retained EU Law, is.[15] Equally, whereas the Ecommerce Directive only applies to intermediaries established in the EU,[16] Art 17 DSM Directive applies in the event that a provider established outside the EU targets the EU territory,[17] and the DSA applies to all providers that offer relevant services within the EU,[18] thereby catching NFT platforms that operate in the EU, but which are based within the UK or the US. Finally, to date and even when given an opportunity to diverge from the direction of the CJEU,[19] the Court of Appeal has chosen to maintain alignment with CJEU law, suggesting that EU law is bound to, "remain relevant for a long time to come."[20] For this reason, the below discussion provides a full picture of the law, to provide the fullest possible legal context within which NFT platforms may be operating. It begins by analysing the liability of NFT platforms within the EU, before turning to the position in the UK and the US.

3. Liability of NFT Platforms Within the EU

Until recently, within the EU platforms have been able to benefit from a safe harbour regime,[21] with rules relatively compatible with those in the US.[22] However, the DSM Directive has begun to shift this perspective, directed at the large content-sharing platforms, such as YouTube and Google, with the intention of making them more responsible and accountable for protecting the rights of rightsholders. However, it is debatable as to whether the DSM Directive does in fact apply to NFT platforms.[23]

Within the EU there are therefore now two potential regimes that may apply when considering the potential liability of NFT platforms for copyright infringement. Firstly, we need to consider, and to an extent exclude, the DSM Directive, before then turning to the alternative, pre-existing regime contained in the InfoSoc Directive, and the recently updated Ecommerce Directive.

[15] EU (Withdrawal) Act 2018 s 6(7); E. Rosati, *Copyright and the CJEU* (2nd edn, OUP 2023) 319.
[16] Ecommerce Directive Recital 58.
[17] E. Rosati (n 15) 315.
[18] DSA Arts 2(1) and 3(d).
[19] *Tunein Inc v Warner Music UK Ltd & Others* [2021] EWCA Civ 441 (26 March 2021).
[20] R. Arnold, 'Divergence of UK law after Brexit: The example of IP' The 22nd Burrell Lecture (2022) 12(2) QMJIP 172, 173.
[21] Ecommerce Directive Arts 12-14
[22] P. Samuelson (2021) (n 8) 1.
[23] B. Bodo (n 1) 279.

3.1 Directive 2019/790 on Copyright and Related rights in the Digital Single Market (DSM Directive)

Should NFT platforms fall within the definition of "online content sharing services providers" (OCSSPs) within the DSM Directive,[24] they would be subject to the specific liability regime of the Directive, which states that OCSSPs perform an act of communication to the public or an act of making available to the public for the purposes of the Directive when they give access to protected content uploaded by their users.[25] As a result, and if caught within the definition of OCSSP, NFT platforms could become directly liable for any unauthorised activity of their users. Further, Art 17(3) DSM Directive expressly excludes the platforms from any safe harbour protection, previously available to them via Art 14(1) Ecommerce Directive.[26]

3.1.1 Are NFT Platforms OCSSPs?

Within the DSM Directive an OCSSP is defined as a provider of an *information society service* whose *main purpose* is to store and give the public access to a large amount of copyright-protected works or other protected subject matter uploaded by its users, which it organises and promotes for profit making purposes.[27]

An *information society service* is defined as any service normally provided for remuneration, at a distance, by electronic means and at the individual request of a recipient of services,[28] a definition which therefore includes NFT platforms. However, the definition of OCSSP continues by providing several exclusions,[29] namely that providers of services such as open-source software-developing and sharing platforms, and online marketplaces are not OCSSPs within the meaning of the DSM Directive.[30] Both of these exclusions could well apply to NFT platforms, thereby leaving them outside of the remit of the DSM Directive.[31] They operate as decentralised digital applications (dApps) so could thus potentially be considered open-source

[24] DSM Art 2 (6).
[25] DSM Art 17 (1).
[26] Ecommerce Directive Art 14(1).
[27] DSM Art 2(6).
[28] Directive 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society Services OJ L 24, Art 1(1)b; EC (2021) European Commission Communication, *Guidance on Art 17 of DSM Directive*. COM (2021) 288 final, III.
[29] DSM Art 2(6), Recitals 62 and 63.
[30] ibid.
[31] B. Bodo (n 1) 279.

software-developing and sharing platforms, and also operate as online marketplaces displaying NFTs, being as they operate as "marketplaces".

However, the next question is what is the *main purpose* of an NFT platform. Is the predominant function of an NFT platform to store and give the public access to a large amount of copyright-protected works or other protected subject matter uploaded by its users, which it organises and promotes for profit making purposes, or is it a marketplace for NFTs? As explained in Recital 62 DSM Directive, online marketplaces may also give access to a large amount of protected works, but this is not their main activity, which is in fact online retail – hence the marketplace exclusion. What is the main purpose of an NFT platform? Is it to store and give the public access to a large amount of protected works uploaded by its users, which it organises and promotes for profit making purposes? Or, is its main purpose retail, in the trading of NFTs, thereby enabling it to rely on the marketplace exclusion? Arguably, NFT marketplaces were not really in the minds of the authors of the legislation in either event, as they potentially tick both of these boxes.

Regarding further clarification of "to store and give the public access" within the definition of an OCSSP, the concept of "to store" refers to content storage that is more than temporary, and "give the public access" relates to access to the content stored, which is given to the public,[32] both of which could apply to NFT platforms. Finally, the guidance states that the profit making purpose should not be taken for granted by the fact that the service is an economic operator as such or based on its legal form, but has to be linked to the profits made from the organisation and promotion of the content uploaded by the users in a manner to attract a wider audience, for example, but not exclusively, by placing advertisement next to the content uploaded by their users.[33] Whilst NFT platforms do not rely on advertising for revenue within their business models, they do generate profit from the organisation and promotion of content.

So, although theoretically within the scope of the definition of an OCSSPs, an NFT platform may fit into two of the exclusions,[34] i.e. either as an open-source software-developing sharing platform, or as an online marketplace. The Commission's guidance on Art 17 DSM Directive

[32] Commission Guidance on Art 17 (n 28) 4.
[33] ibid 5.
[34] DSM Art 2(6).

provides no real guidelines on how to interpret these excluded categories,[35] with Recital 63 DSM Directive providing that whether an OCSSP stores and gives access to a large amount of copyright-protected content should be made on a case-by-case basis.

Bodo et al conclude that the exclusions would apply, with NFT platforms outside of the scope of DSM Directive Art 17.[36] The UK Parliament DCMS committee also reached the same conclusion.[37] However, it is therefore necessary to still consider the DSM Directive, especially given how, in is discussion regarding making NFT platforms more accountable, the DCMS review recommended that the UK should adopt measures similar to Art 17 DSM Directive.

So, on this basis this section continues with a brief discussion on what it would mean if an NFT platform were in fact to be "caught" by the DSM Directive.

3.1.2 Application of the DSM Directive

If applicable, an NFT platform would be required to obtain authorisation from a rightsholder, for instance by concluding a licensing agreement, in order to then be able communicate or make available to the public a protected work subsequently uploaded by a user without authorisation.[38] Failure to do so would bring the platform within the specific liability regime,[39] i.e. directly liable for infringing content posted on its platform. However, in support of the argument that the DMS would not apply, the legislation does not appear to be crafted with the likes of NFT platforms in mind, as it is unfeasible and unworkable that a rightsholder would either be aware of, or wish to give authorisation for, an unauthorised minting of an artwork to which they own the rights. There also currently exist no measures in place to facilitate meaningful licensing on NFT platforms, with the only option available to rightsholders being to continually monitor the platforms and submit notice and takedown requests.[40]

Where a platform fails to receive authorisation from a rightsholder then they are directly liable for unauthorised acts of communication to the public, unless they can demonstrate that (a) they

[35] Commission Guidance on Art 17 (n 28).
[36] B. Bodo (n 1) 279.
[37] House of Commons, Culture Media and Sport Committee, 'NFTs and the Blockchain: the risks to sport and culture'. HC 598, 11 October 2023 https://publications.parliament.uk/pa/cm5803/cmselect/cmcumeds/598/report.html para 17.
[38] DSM Art 17(1).
[39] DSM Art 17(4).
[40] DCMS NFT Report (n 37) para 15.

have made best efforts to obtain an authorisation, and (b) made, in accordance with high industry standards of professional diligence best efforts to ensure the unavailability of specific works and other subject matter for which the rightholders have provided the service providers with the relevant and necessary information; and in any event (c) acted expeditiously, on notice from the rightholders to disable access to, or remove from their websites, the notified works or other subject matter, and made best efforts to prevent future uploads in accordance with point (b).[41]

So, even if they fail to obtain authorisation, an NFT platform may well argue that they made best efforts to obtain authorisation, ensure the unavailability of specific works and acted expeditiously to remove works. Bodo argues that most platforms would be successful in this defence as they put in place some or a combination of the following measures aimed at curbing infringement: ToS for lawful conduct on their platforms; licencing terms for the tokenised works to ensure lawful transactions; notice and action measures to enable rightsholders to enforce claims against infringers (e.g. notice and takedown); and technological solutions to identify and remove or block infringing works.[42] However, as there currently exist no measures in place to facilitate meaningful licencing on platforms, it is questionable as to whether platforms have in fact made "best efforts" to obtain authorisation. As stated in the Guidance to Art 17 the interpretation of key issues e.g., the interpretation of "best efforts" is to be on a case-by-case basis with Member States needing to let the courts, and ultimately the CJEU, decide.[43]

The conclusion here is that NFT platforms are not the intended target of the DSM Directive. It is aimed at the larger content-sharing platforms, e.g. YouTube, and their need to obtain authorisation from rightsholders, in order to then give the public access to copyright protected works uploaded by their users.[44] The object is to provide legal certainty for users uploading material when they are not acting on a commercial basis, or where their activity does not generate significant revenues.[45] This is not necessarily applicable here as NFT platform are marketplaces, even if they do trade in protected material, with such material typically uploaded

[41] DSM Art 17(4).
[42] B. Bodo (n 1) 279.
[43] J.P. Quintais, 'Commission's Guidance on Art 17 DSM' (*Kluwer*, 10 June 2021) https://copyrightblog.kluweriplaw.com/2021/06/10/commissions-guidance-on-art-17-cdsm-directive-the-authorisation-dimension/.
[44] DSM Art 17(1).
[45] DSM Art 17(2).

by the rightsholders themselves, on a commercial basis and often generating significant revenue. However, and as mentioned above, the DSM Directive is relevant as context when considering the direction of travel in terms of making platforms more accountable.

3.2 The Alternative Liability Regime: Article 3 Directive 2001/29/EC (InfoSoc Directive) and Articles 12-14 Directive 2000/31 (Ecommerce Directive)

So, assuming that the DSM Directive does not in fact apply to NFT platforms, we now turn to the alternative existing regime that applies in the EU, and which applies if an NFT platform falls outside of the DSM Directive.[46]

Up until the advent of the DSM Directive the regime that exclusively applied when considering the liability of platforms was either the potential for direct liability for actions of a platform operator under (typically) the right of communication and making available to the public found in Art 3 InfoSoc Directive, and/or the potential for liability as an online intermediary for indirect copyright infringement i.e., the illegal actions of their users.

To clarify, an NFT platform can be held directly liable for copyright infringement, for which there is no safe harbour, as there exists no immunity for the own actions of an intermediary. However, in relation to unlawful activities committed by users of its services, and in respect of which the provider plays no active role, Articles 12-14 Ecommerce Directive (now largely reproduced in Arts 4 to 6 of the DSA) do provide a safe harbour regime for intermediaries, i.e., immunity from monetary liability for indirect infringement.[47]

The principle of safe harbour regimes is that of knowledge-based liability, i.e., providers of hosting services cannot be held liable for content that they store for their users, unless they obtain knowledge of the illegality of the content and fail to act expeditiously to remove to such content.[48] So, if sufficiently passive, an NFT platform may rely on the safe harbour regime.

As discussed in Chapter 9, at a formal level the EU legislature has only harmonised the positive conditions for establishing direct liability via the exclusive rights in the InfoSoc Directive.[49]

[46] DSM Art 17(3)
[47] E. Rosati (n 2) 5.
[48] F. Wilman, *The Responsibility of Online Intermediaries for Illegal User Content in the EU and the US* (EE, 2020) 320.
[49] E. Rosati (n 15) 187.

Through Articles 12-14 Ecommerce Directive (and going forward Articles 4 to 6 DSA) the EU legislature has harmonised the *negative* conditions and requirements for indirect liability, i.e., the conditions and requirements not to be held liable through the safe harbour immunities. Insofar as indirect liability is concerned, the positive requirements are not harmonised at the EU level, and are a matter of national law.[50] So, a finding of liability for indirect infringement of an NFT platform is for a national court to decide.[51]

It is also important to note that even though safe harbour regimes could provide immunity from monetary liability, Art 8(3) InfoSoc obligates member states to ensure that rightsholders can still apply for injunctions against "intermediaries whose services are used by a third party to infringe a copyright or related right." This is because, "In a digital environment, in particular, the services of intermediaries may increasingly be used by third parties for infringing activities. In many cases such intermediaries are best placed to bring such infringing activities to an end."[52]

The following section will discuss direct and indirect liability separately. It will begin with a discussion on the direct liability for an NFT platform operator for copyright infringement, before following with a discussion on indirect liability, and the potential for safe harbour immunity.

3.2.1 Direct Liability under InfoSoc

So, of relevance here is the discussion in Chapter 9 and in particular §9.2.2 on the right of communication to the public and making available. An act of communication only occurs if a *person or entity* intervenes with full knowledge that the consequences of their action encompass giving access to a protected work to a "public."[53] Another determining factor is the existence of a "new public" i.e. "a public which was not taken into account by the authors of the protected works when they authorised their use by the communication to the original public."[54]

[50] Opinion of AG Saugmandsgaard Oe in *You Tube*, C-682/18 and C-683/18, EU:C:2020:586, 102; E. Rosati (n 2) 5.
[51] Opinion of AG Szpunar in *Louboutin*, C-148/21 and C-184/21, EU:C:2022:422, 78−79.
[52] InfoSoc Recital 59.
[53] Case C 306/05 *SGAE* EU:C:2006:764*;* Cases C-403/28 and C-429/08 *FA Premier League* EU:C:2011:631.
[54] *FA Premier League* (n 53) 197.

So, the question then is under what conditions can a platform be found to be directly liable for the unlawful activities of its users? Within the EU the liability of platform operators for a user's unlawful activity has shifted from being found, in principle, on a indirect accessory basis to being also possible, in certain conditions, on a direct basis.[55]

Two cases in particular have contributed to expanding the scope of the EU direct liability regime, *YouTube*[56] and the earlier case, *Ziggo*.[57] To understand *YouTube* we need to frame it within the broader context of *Ziggo*,[58] which concerned the notorious Pirate Bay. In that case the CJEU ruled for the first time that a platform operator could be liable, on a direct basis, for acts of communication/making available to the public as per Art 3 InfoSoc, for facilitating the finding of unlawful content, so "piracy".

As discussed in Chapter 9, the concept of communication to the public within the meaning of Art 3(1) requires an individual assessment, but includes two cumulative criteria, namely the requirement of an act of communication of a work, and the communication of that work to a public.[59]

In *Ziggo* the CJEU held that by making the platform available and managing the platform, its operators provided users with access to the works concerned.[60] The operators were therefore regarded as playing an essential role in making the works in question available, without such intervention it would not have been possible, or it would have been more difficult for users to share the works.[61] The Court dismissed the argument that Pirate Bay could be regarded as providing mere physical facilities for enabling or making a communication, and held that the making available and management of an online sharing platform must therefore be considered an act of communication for the purposes of Art 3(1) InfoSoc.[62]

In terms of the requirement that the communication must be to a new public, the court held that the Pirate Bay operators could not be unaware that the platform provided access to works

[55] E. Rosati (n 15) 188.
[56] *YouTube* (n 3).
[57] *Ziggo* (n 3).
[58] ibid.
[59] *YouTube* (n 3) 66; Case C-392/19 *VG Bild Kunst*, EU:C:2021:181 29 and 33.
[60] *Ziggo* (n 3) 36-39.
[61] E. Rosati (n 15) 190.
[62] *Ziggo* 36-39.

published without the consent of the rightsholders, and in such circumstances it must be held that there is a communication to a "new public."[63]

This decision was in marked contrast to earlier decisions by national courts in Europe and the US which dealt with file-sharing platforms principally in terms of indirect liability,[64] and since which a debate has ensued as to whether this ruling could be applied to platforms operators performing less egregious activities.[65]

In *YouTube*, the CJEU concluded, in line with *Ziggo*, that the role of the platform operator qualifies as indispensable, where the initial uploads of unlawful content are initiated by users of the platform operating autonomously. *YouTube* concerned the direct liability of platform operators for unauthorised content uploaded by its users, with the CJEU holding that a key consideration is whether the platform operator acts deliberately, that is with full knowledge of the consequences of their intervention.[66] So, in conclusion a platform operator could be directly liable, provided that their role is sufficiently indispensable *and* deliberate.[67]

The CJEU provided a (non-exhaustive and non-cumulative) number of factors for national courts to consider, with the assessment encompassing whether the platform operator:

(i) Refrains from implementing appropriate technological measures that can be expected from a diligent operator in the specific circumstances at issue to counter credibly and effectively copyright infringements on its platform.
(ii) Participates in selecting protected content illegally communicated to the public.
(iii) Provides tools specifically intended for the illegal sharing of protected content, or that it knowingly promotes such sharing, which may be attested by the fact that that operator has adopted a financial model that encourages users of its platform to illegally communicate protected content to the public via that platform.[68]

[63] *Ziggo* (n 3).
[64] P. Goldstein & P. Bernt Hugenholtz (n 6) 314.
[65] E. Rosati, 'When in Rome, do as the Romans do?' (*IPKat*, 5 March 2024) https://ipkitten.blogspot.com/2024/03/when-in-rome-do-as-romans-do-rome-court.html.
[66] E. Rosati (15) 192; *YouTube* (n 3) 78-81.
[67] *YouTube* (n 3).
[68] E. Rosati (15) 193; *YouTube* (n 3) 84.

However, on the other hand, the mere fact that a platform operator knows in a general sense that illegal content may be shared by its users is insufficient to conclude that it intervenes with the purpose of giving internet users access to that content.[69]

So, a platform does not make a communication to the public unless it contributes, beyond merely making that platform available, to giving access to such content to the public.[70] This is the case, inter alia, where the platform operator has specific knowledge of unauthorised content and refrains to from expeditiously deleting it or blocking access to it.[71]

3.2.2 How Does This Apply to the Direct Liability of an NFT Platform?

So, following *YouTube* and *Ziggo*, it would be possible to find the platform operators of an NFT platform directly liable for copyright infringement. The making available and management of an online sharing platform can be considered an act of communication for the purposes of Art 3(1) InfoSoc.[72] As per *Ziggo*, the operator of such a platform plays a role that is indispensable when its users make potentially illegal content available as, if that platform were not provided and manged it would be impossible, or at the very least, more complex for users to share the content on the internet.[73]

As we have seen from the above discussion in *YouTube* the Court focused on whether the intervention of an operator is deliberate i.e., it is with full knowledge of the consequences.[74] It confirmed that the intervention of The Pirate Bay in *Ziggo* was deliberate,[75] before providing a list of factors for national courts to consider when assessing whether such an intervention can be held to be "deliberate."[76]

So, is an NFT platform is deliberately intervening, or does it just have abstract knowledge of illegal content?[77]

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[69] *YouTube* (n 3) 84.
[70] ibid 102.
[71] ibid 102.
[72] *Ziggo* (n 3) 36-39.
[73] *YouTube* (n 3) 77, *Ziggo* (n 3) 36 and 37.
[74] *YouTube* (n 3) 78-81.
[75] ibid 82.
[76] ibid 84.
[77] ibid 85.

Applying the list of factors from *YouTube,* have NFT platforms refrained from implementing appropriate technical measures to prevent copyright infringements? This is difficult to say. As discussed in the empirical findings, there is no consensus amongst the platforms regarding either their level of verification for a user minting NFTs on a platform (Chapter 5 §7 and Chapter 6 §6) or their approach to copyminting (Chapter 7 §3.2). *OpenSea* is the only platform, amongst those researched, with a "copymint prevention system" which uses a combination of image detection technology and human review to detect copyminting. In terms of transparency the platforms could all do more to explain their processes and decisions, but it is hard to establish what is "appropriate" in the circumstances, given the costs and complexity involved, but all could arguably be doing more.

Do platforms participate in the selection of content? This question is easier to answer, as it is clear that although all of the platforms say in their ToS that they do not monitor content, and all go to great lengths to avoid liability for monitoring, they all retain the right to monitor and select content, and all do so (Chapter 6 §6, Chapter 7 §3.2 and §4.2).

Finally, are they knowingly promoting illegal sharing, and have they adopted a financial model that encourages users to illegally communicate protected content to the public? Again, the answer to this question could be found in the affirmative, as it is not in the financial interests of platforms to restrict the sale of unauthorised content, as they directly benefit from the sale of NFTs, via transaction fees. In *YouTube* the Court held that whilst a presumption of intervention cannot be inferred from the profit making-nature of the intervention, it is not irrelevant.[78]

Regarding the requirement for the communication to be made "to the public", NFTs are minted for financial gain and communicated to a "new public," that is to say, a public not already taken into account by the rightsholder.[79] As argued in Chapter 9 §2.2.4, and following the opinion of AG Szpunar in *VG Bild-Kunst*[80] the concept of a "new public" need not necessarily be regarded as a requirement in cases where the act is a new act of communication, i.e. an act of exploitation independent of or additional to any act of communication by the rightsholder.[81]

[78] *YouTube* (n 3) 86 and 87; *Ziggo* (n 3) 29.
[79] *YouTube* (n 3) 70.
[80] Opinion of AG Szpunar in *VG Bild Kunst*, C-392/19, EU:C:2020:696, 73.
[81] E. Rosati (n 15) 177.

So, in conclusion although, as provided by the Court, an individual assessment must take place in each case, it is not beyond comprehension that, based on the above discussion, an NFT platform could be found directly liable for communication to the public within Art 3(1) InfoSoc for unauthorised content uploaded by its users.

The concept of communication to the public should, as underlined in Recital 23 of Infosoc, be understood in a broad sense,[82] with recitals 4, 9 and 10 InfoSoc establishing a high level of protection of authors, allowing them to obtain appropriate reward for the use of their work, including when a communication to the public takes place.[83] At the same time, Recitals 3 and 31 InfoSoc require a fair balance between on the one hand, the interests of rightholders, safeguarded by Art 17(2) of the of Fundamental Rights of the EU 2012 (The Charter) and on the other, the fundamental rights of users, in particular their freedom of expression and of information, safeguarded by Art 11 of the Charter.[84]

As recently argued by E. Rosati, what is required is a balanced consideration of all relevant circumstances, including an evaluation of the efforts made by the platform operator to credibly and effectively counter the spread of unlawful content, the amount of unlawful content effectively present on a platform vis-a- vis lawful content, and the platforms overall business model.[85] The point here is that should a court, from a "policy" point of view, want to find an NFT platform liable for copyright infringement, on the basis of the above discussion, they could.

If a national court were to find a platform operator directly liable for copyright infringement then that platform would be automatically disqualified from the hosting safe harbour provision of Article 14 ECommerce Directive, as there exists no immunity for direct liability. However, if in the alternative the actions of a platform are found not to be "indispensable and deliberate", so no direct liability, then provided that the platform has acted expeditiously to remove or disable access to the illegal content it may be able rely on the safe harbour provision of Art 14 (Art 6 DSA).[86]

[82] *YouTube* (n 3) 63.
[83] *YouTube* (n 3) 63, *VG Bild Kunst* (n 59) 26 and 27.
[84] Case C-160/15 *GS Media,* EU:C:2016:644, 31; Case C-467/17*Pelham & Others*, EU:C:2019:624, 32.
[85] E. Rosati (n 65).
[86] *YouTube* (n 3) 104.

3.2.3 Safe Harbour for Hosting Providers - Article 14 Directive 2000/31 (Ecommerce Directive)

So, assuming that an NFT platform is hosting infringing content, and it is not directly liable for infringing the right of communication and making available (Art 3(1) InfoSoc), can it be held to be indirectly liable for the actions of its users?

In principle the safe harbour regime in the EU provides that online intermediaries are not liable for infringements committed by users of their services.[87] Inspired by corresponding provisions of the DMCA, Articles 12 to 14 of the Ecommerce Directive (now, respectively, Articles 4 to 6 of the DSA) establish a safe harbour regime for information society service providers (ISSPs) who act, respectively as mere conduits, caching or hosting providers. As with the DSM Directive, an *information society service* is defined as any service normally provided for remuneration, at a distance, by electronic means and at the individual request of a recipient of services.[88] It is not disputed that an NFT marketplace would be such a service provider, and relevant here is the hosting provision contained in Art 14 Ecommerce Directive (now Article 6 DSA) which provides that an ISSP will not be liable for information stored at the request of a recipient of the service.

The term "storage" refers to the holding of data in the memory of a server.[89] However the concept has been broadly construed, with the case law capturing the activities undertaken by social media companies such as Facebook, online marketplaces such as eBay and video-sharing platforms such as YouTube.[90] Whilst it could be argued that NFTs themselves are distributed (in the technical sense) i.e., stored on the blockchain rather than on a server, the data required to mint the NFT is uploaded to the platform and details of the NFT are nevertheless stored by the platform at the request of the user.

[87] E. Rosati (n 2) 4.
[88] Information Society Services Directive (n 28) Art 1(1)b; Commission Guidance on Art 17 DSM (n 28) 4.
[89] Case C-324/09 *L'Oréal and Others v Ebay*, EU:C:2011:474, 110.
[90] Case C-18/18 *Glawischnig-Piesczek v Facebook Ireland*, EU:C:2019:821; *L'Oreal v Ebay* (n 89); *YouTube* (n 3).

However, a hosting provider is only protected if it does not have *actual* knowledge of the illegal activity or illegal content,[91] and if and upon obtaining such knowledge or awareness, acts expeditiously to remove or disable access to the illegal content.[92]

In addition, exemption from liability is only available if a hosting provider is sufficiently *passive* in nature.[93] As per Recital 42 Ecommerce Directive, immunity is only available where the role of an intermediary is of "a mere technical, automatic and passive nature, which means that [it] has neither knowledge of nor control over the information which is transmitted or stored."[94] To clarify, immunity is not available to a hosting provider that, "instead of confining itself to providing that service neutrally by a merely technical and automatic processing of the data provided by its customers, plays an active role of such a kind as to give it knowledge of, or control over, those data."[95] To the extent that it remains passive, a provider is in principle not liable unless notified.[96] So to be covered, as now confirmed in Recital 18 DSA, a provider need to be sufficiently passive *and*, if notified of illegal content, act "expeditiously" to remove it.

Although the CJEU has provided some guidance,[97] the distinction between passive and active is not altogether clear. The mere fact that the operator of an online marketplace stores offers for sale on its server, sets its ToS, is remunerated for that service and provides general information to its customers cannot have the effect of denying it safe harbour for immunity.[98] However, where, by contrast, the operator has provided assistance which entails, in particular, optimising the presentation of the offers for sale in question or promoting those offers, it must be considered to have played an active role of such a kind as to give it knowledge of, or control over, the data relating to those offers for sale, and cannot therefore rely on the exemption from liability referred to in Article 14(1) of the Ecommerce Directive.[99]

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[91] Ecommerce Directive Art 14 1(a) updated by DSA 6 1(a).
[92] ibid Art 14 1(b) updated by DSA 6 1(a).
[93] ibid Recital 42.
[94] *YouTube* (n 3)105.
[95] Cases C-236/08 to C-238/08 *Google France and Google*, EU:C:2008:389, 114 and 120; *L'Oréal v Ebay* (n 89) 123; Case C-521/17 *SNB-REACT*, EU:C:2018:639, 52; *YouTube*, (n 3) 105; Opinion of AG Szpunar in *Google Ireland and Others*, C-376/22, EU:C:2023:467, 46; DSA Recital 18.
[96] M. Husovec (n 14) 3.
[97] *Google* (n 95); *L'Oréal v Ebay* (n 89).
[98] *L'Oréal v Ebay* (n 89)115.
[99] ibid 116.

Article 14(1) must therefore be interpreted as applying to the operator of an online marketplace, where that operator has not played an active role allowing it to have knowledge or control of the data store, and the operator plays such a role when it provides assistance which entails, in particular, optimising the presentation of the offers for sale in question or promoting them.[100] Whether a NFT platform has played an "active role" or not must be assessed by the relevant national court on a case-by-case basis.[101] Could an NFT platform be found to have played an active role if it is shown to have knowledge or control over the data relating to the "sale" of NFTs? Clearly, NFT platforms go above and beyond "optimising the presentation" of offers, and as evidenced by the empirical research in Part III, often monitoring, selecting, verifying and curating content. Such behaviour could therefore put an NFT platform beyond the protection of immunity. Bodo et al consider it likely that an NFT platform will qualify as sufficiently "passive" to justify protection under the hosting safe harbour under Art 14. However, following the above analysis, a Court may not necessarily agree.

Even if an NFT platform is found to be sufficiently passive, we still need to look at the conditions to which entitlement to the exemption from liability is subject under points (a) and (b) of Art 14(1) Ecommerce Directive,[102] i.e., in addition to being sufficiently passive, a hosting provider is only protected if it does not have *actual* knowledge of the illegal activity,[103] and if and upon obtaining such knowledge or awareness, acts expeditiously to remove or disable access to the information.[104]

But how to qualify such "actual knowledge" or awareness? The CJEU in *L'Oreal* suggested that Art 14 doesn't apply to a provider that is aware of facts or circumstances on the basis of which a diligent economic operator should have identified the illegality in question and acted in accordance with Art 14(1)b,[105] or when it becomes aware, in one way or another of the facts or circumstances.[106] For example, as the result of an investigation undertaken on its own initiative as well as in a situation in which the operator is notified of the existence of such illegal activity.[107]

[100] ibid 123.
[101] ibid 117.
[102] *Google* (n 95) 120.
[103] Ecommerce Directive Art 14 1(a).
[104] ibid Art 14 1(b).
[105] *L'Oréal v Ebay* (n 89) 120.
[106] ibid 121.
[107] ibid 122.

This does seem to suggest that a platform may now need to investigate at some level the legality of the material that they are hosting? The question then arises as to whether by doing so this then by default entails "active" participation and excludes the application of the hosting safe harbour? For example, monitoring of content by an NFT platform? Art 15 of the Ecommerce Directive (Art 8 DSA) sets a prohibition on member states to impose on providers a general obligation to monitor the information they store, or a general obligation actively to seek facts or circumstances that indicate illegal activity. The "Good Samaritan" Clause in Art 7 of the DSA is meant to address concerns that EU law discourages voluntary measures as "too active."[108] That is, if a platform takes proactive steps to avoid infringing activities being performed by users of its service, this should not automatically exclude the application of the hosting safe harbour.[109]

In addition, the CJEU highlighted how an "insufficiently precise or inadequately substantiated" take down request would not impose an obligation on the provider to act expeditiously,[110] and following which Art 16 DSA now provides a harmonised approach to notice and action mechanisms for hosting providers, requiring notices to be "sufficiently precise and adequately substantiated"[111] However, this does still leave unanswered the question as to whether an inadequate notice provides sufficient knowledge for the purposes of Art 14 Ecommerce Directive (Art 6 DSA)?

So, in conclusion, even if found to be sufficiently passive, an NFT platform may not always avoid liability for the unauthorised actions of its users. It would need to demonstrate a lack of actual knowledge, and if and upon obtaining information, how it acted expeditiously to remove or disable access to the information. As we have seen from the empirical research, the NFT platforms researched may struggle to clear these hurdles, given that how they all adopt a degree of verification of users and curation of collections (Chapter 6 §6) and exhibit a reluctance to engage with copyright disputes (Chapter 7 §3.2).

[108] F. Wilman (n 48) 335.
[109] E. Rosati (n 15) 194; DSA Art 7.
[110] *L'Oréal v Ebay* (n 89) 122.
[111] DSA Art 16(2).

3.2.4 Conclusion of Intermediary Liability Within the EU

So, regarding the current position of liability for NFT platforms for infringing content uploaded by users, the key question is therefore whether NFT platforms are directly liable for communicating and/or making available those works to the public ***OR*** whether, if not directly liable, they qualify as hosting service providers that in principle benefit from the liability exemption or hosting safe harbour in Ecommerce Directive Art 14.[112]

Bodo is of the opinion that in most cases NFT platforms do not cross the threshold of deliberate intervention, so are not directly liable for communicating works to the public, and that they will likely qualify as sufficiently "passive" to justify protection for indirect liability under the hosting safe harbour .[113]

However, from the above analysis and in line with the discussion regarding the DSM Directive and the transition in the EU towards a more direct liability regime, it is possible that a court could find an NFT platform directly liable for copyright infringement where it is found to have deliberately intervened in the communicating and making available of works to the public.

Finally, Art 14 Ecommerce Directive only establishes the necessary conditions for a platform not to be liable on an indirect basis for the illegal activity of a user.[114] The positive conditions for indirect liability are a matter for national law.[115] So, we now turn to the position in the UK, to consider the possibility of liability for indirect infringement for an NFT platform in the UK.

4. Intermediary Liability in the UK

The CDPA 1988 has been framed to give effect to the terms of international treaties, e.g., the Berne Convention 1886. There is no unitary copyright protection in the EU, but the EU, through various Directives and Regulations, has attempted to harmonise aspects of the law. UK legislation has been updated accordingly and the UK courts' interpretation of aspects of national legislation has similarly evolved to reflect CJEU ruling in respect of the harmonisation

[112] B. Bodo (n 1) 279.
[113] ibid.
[114] E Rosati (n 15) 268.
[115] Opinion of AG Szpunar in *Louboutin*, C -148/21 and C-184/21, EU:C:2022:422, 78-79

of EU Legislation.[116] The European Union (Withdrawal) Act 2018 provides that any EU enactment or rule of law made up to 31st January 2020 ("Exit Day") remains UK law post Brexit as retained law, with Section 5(1) of the Act confirming how EU legislation subsequently adopted, or with a transposition date after Exit Day, does not bind the UK. Hence the UK, with its transposition date of 7 June 2021, has not implemented the DSM Directive, and therefore its Art 17 in relation to use of protected content by OCSSPs, and neither is the UK bound by the DSA which updates the Ecommerce Directive.

However, even though it has no intention of implementing the DSM Directive, the UK Government has indicated that it will consider the UK's copyright regime and policy more broadly, including examining the extent of OCSSPs liability for the posting of copyright infringing material on their platforms, avoiding the risks of over-blocking content and protecting freedom of expression online.[117] This does mean, however, that the balance in the UK of responsibility between OCSSPs and their users for online content may not always be in line with the rules or direction within the EU.

In the meantime, Government guidance does state that the UK government is committed to upholding the liability protections of hosting providers, and how there will continue to be a "notice and take down regime" where a platform must remove illegal content that they become aware of or risk incurring liability.[118] However, retained law of the UK dictates that the UK remains bound by the Ecommerce Directive, rather than the later post Brexit DSA updating the Ecommerce Directive. However, for the purposes of this research, the assumption will be made that for the time being EU law still broadly applies within the UK, and at the very least will "remain relevant for a long time to come."[119]

[116] K. Swaine & Others, 'What does Brexit mean for IP?' (*Gowling.com*, 8 November 2020) https://gowlingwlg.com/en/insights-resources/articles/2020/what-does-brexit-mean-for-intellectual-property/#footnote-2.
[117] Simmons & Simmons, 'The DSM Directive two years on' (*Simmons-simmons.com*, 9 September 2021) https://www.simmons-simmons.com/en/publications/cktct3gfi1tls0b02r8s9vgfb/the-dsm-directive-two-years-on-is-it-in-force-.
[118] UK Government Guidance, 'The Ecommerce Directive and the UK' (*Gov.uk*, 18 January 2021) https://www.gov.uk/guidance/the-ecommerce-directive-and-the-uk.
[119] R. Arnold (n 20) 173.

4.1 Enforcement Measures in the UK

InfoSoc's aim was to harmonise copyright protection across the EU, and enable the EU to ratify the two WIPO treaties.[120] Significant amendments were made to the CDPA to implement InfoSoc,[121] and questions of interpretation referred to the CJEU have created a copyright jurisprudence which the courts in the UK have taken (and continue) to take into account.[122] The Ecommerce Directive was implemented in the UK by the Electronic Commerce (EC Directive) Regulations 2002,[123] which set out each safe harbour's immunity from liability for damages or for any pecuniary remedy or any criminal sanction for actions by their users.

As per Art 15 Ecommerce Directive, and confirmed by the CJEU, there is also no general obligation on hosting providers to monitor information, or actively seek facts or circumstances indicating illegal activity.[124] The CJEU ruled in *SABAM*[125] that an injunction requiring Netlog, a social network service provider, to implement a system to filter information in order to block allegedly infringing files was contrary to Art 15(1) Ecommerce Directive. However, nothing prevents any party agreeing different contractual terms or affects the right of any party to apply for injunctive relief.[126] This is reflected in Section 97A CDPA, which reflects Art 8(3) InfoSoc Directive.

Section 97A CDPA states that a court has the power to grant an injunction against a service provider where that service provider has actual knowledge of another person using their service to infringe copyright. The High Court granted the first injunction to block access to a website in *Newzbin 2*,[127] and since when it has issued blocking orders for hundreds of websites with applications filed by a diverse group of copyright owners targeting different types of structurally infringing websites,[128] and with different types of blocking orders sought evolving over time and most recently including cyberlocker and streamripping sites.[129]

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[120] S. Stokes (2019) *Digital Copyright* (Hart, 5th Edition, 2019) 66.
[121] ibid 66.
[122] ibid 67.
[123] SI 2002/2013
[124] Case C-70/10 *Scarlet Extended SA* [2011] ECR 1-0000; Case C-360/10 *Belgische Vereniging van Auters, Componisten en Uitgevers CVBA (SABAM)* EU:C:2012:85.
[125] *SABAM* (n124).
[126] Ecommerce Regulations Reg 20(1).
[127] *Twentieth Century Fox Film Corp & Ors v BT plc* [2011] EWHC 1981 (Ch) (*Newzbin 2)*
[128] E. Rosati (n 15) 346.
[129] E. Rosati, 'High Court grants, for the first time, website blocking orders' (*IPKat*, 27 February 2021) https://ipkitten.blogspot.com/2021/02/high-court-grants-for-first-time.html.

4.2 Indirect Liability in the UK

In the UK, indirect liability takes the form of an exclusive authorisation right.[130] Section 16(2) CDPA provides that, "copyright in a work is infringed by a person who without the license of the copyright owner does, or *authorises* another to do, any of the acts restricted by copyright". The authorisation in question must come from someone having or purporting to have authority, and the person authorising the infringement must have some degree of actual or apparent control over the person authorised.[131] An act is not authorised by a person who merely enables, assists or encourages another to do the act, but who does not purport to have any authority which he can grant to justify the doing of the act.[132]

A more recent definition of authorisation is:

> *…the grant or purported grant of the right to do the act complained of. It does not extend to the mere enablement, assistance or even encouragement. The grant or purported grant [..] may be express or implied [..] In a case which involves an allegation of authorisation by supply, these circumstances may include that nature of the relationship between the alleged authoriser and the primary infringer, whether the equipment or other material supplied constitutes the means used to infringe, whether it is inevitable it will be used to infringe, the degree of control which the supplier retains and whether he has taken any steps to prevent infringement. These are matters to be taken into account and may or may not be determinative depending upon all the other circumstances.*[133]

In addition, there is also the possibility of liability for copyright infringement on the basis of being a joint tortfeasor if there is found to be a concerted/common design to infringe on behalf of the parties concerned.[134] However, the role of a provider of a platform would need to be more than that of a mere facilitator, with the provision of a platform inevitably causing or procuring acts which amount to infringement by any UK user of it.[135]

Since 2008 there have been a number of cases which indicate that courts in the UK are prepared to take a fairly robust view against those authorising online copyright infringement. The early

[130] P. Goldstein & P. Bernt Hugenholtz (n 6) 317.
[131] S. Stokes (n 120) 187.
[132] *CBS Inc v Ames Records and Tapes Ltd* [1982] Ch 91; *Amstrad Consumer Electronics plc v British Phonographic Industry Ltd* [1986] FSR (CA); *CBS Songs Ltd v Amstrad plc* [1988] 1013 HL.
[133] *Twentieth Century Fox v Newzbin* [2010] EWHC 608 (Ch) *(Newzbin 1*) 90.
[134] *Sea Shepherd UK v Fish & Fish Ltd* [2015] UKSC 10.
[135] *Football Dataco Ltd v Stan James* [2013] EWCA Civ 27 96-98.

cases included *Newzbin 1,*[136] *Newzbin 2*[137] and *Pirate Bay*.[138] Newzbin provided a facility for users to easily search for unlawful copies of films on Usenet. The court had no problem finding that the service was aimed at making copies of infringing films available, and that any reasonable member of the public would deduce that Newzbin had the authority to grant any required permission to copy any film that it had approved. Equally the court had no difficulty in finding the defendant liable as a joint tortfeasor with its users, as well as liable for communication to the public. [139] Following this outcome, a second offshore Newzbin website appeared, and in *Newzbin 2* the court granted a website blocking order (injunction) under s 97A CDPA requiring BT to block access to Newzbin 2 in the UK, as it was satisfied that the operators of Newzbin 2 used BTs services to infringe copyright (again by authorisation, joint liability for their users' infringement and communicating the works to the public).[140] This approach has been adopted in subsequent cases involving blocking injunctions with "stream-ripping" websites.[141]

Pirate Bay, however, like Newzbin, provided a P2P service where the service provider itself does not copy, store and make available content (in this case music), but relies on its users to do so.[142] Here, the court found that the Pirate Bay was liable for authorising copyright infringement by its users through reproduction and communication, in addition to accessory liability as a joint tortfeasor with its users.[143]

Regarding the indirect liability of NFT platforms within the UK, on the basis of the above discussion, it may be possible for a claimant to argue that an NFT platform authorises copyright infringement by its users, that it participates in a common design with its users to infringe copyright and that the platform itself infringes copyright by communicating the protected works to the public.

[136] *Newzbin 1* (n 133).
[137] *Newzbin 2* (n 127).
[138] *Dramatico Entertainment Ltd v British Sky Broadcasting* [2012] EWHC 268 (Ch) (*Pirate Bay).*
[139] *Newzbin 1* (n 133) 102 and 126.
[140] *Newzbin 2* (n 127) 113.
[141] *Young Turks Recordings v BT plc* [2021] EWHC 410 (Ch).
[142] S. Stokes (n 120) 191.
[143] ibid 192.

4.3 Summary of the UK position

The conclusion is that when it comes to enforcement measures, UK courts have been adept at overcoming technological hurdles,[144] and have also indicated how technology does not present insurmountable challenges when it comes to traditional enforcement measures regarding IP infringement.[145]

5. Intermediary Liability in the US

The US is the birthplace and home to many major global internet platforms that host content and make such content available to users,[146] and which have played a major role in shaping copyright regimes.[147] The US is also the location for the majority of the NFT platforms discussed in this research, and this section discusses intermediary liability from a US position, highlighting in particular how the approach taken is increasingly different to that of the EU.

Copyright liability in US law is either direct or indirect. Direct liability is the liability that attaches to an actual copyright infringement of a protected work, whether by copying without authorisation or by violating any of the rights possessed by the copyright owner.[148] Direct liability is usually more straightforward, in that something is either infringed or not. However, because service providers generally provide the means for users to upload and distribute content, rather than provide the content themselves, rightsholders in the US are more likely to claim that a service provider is indirectly liable, instead of directly liable, for copyright infringement.[149] Various indirect liability doctrines that underpin a service providers potential liability have emerged from common law principles,[150] so indirect liability is more nuanced as it is judge-made and has accumulated on a case-by-case basis. This makes it more fact specific and also potentially more prone to evolution through changes in technology and normative behaviours.[151]

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[144] E. Rosati (n 129); *Osbourne v Persons Unknown, Ozone* [2022] EWHC 1021 (Comm).
[145] *Osbourne* (n 144).
[146] A. Holland, 'Intermediary Liability in the US' (Berkman Centre for Internet & Society, Harvard University) https://publixphere.net/Intermediary_Liability_in_the_United_States.
[147] ibid.
[148] 17 USC §106.
[149] USCO, §512 of Title 17 'A Report of the Register of Copyrights' May 2020 https://www.copyright.gov/policy/section512/section-512-full-report.pdf 21.
[150] *MGM Studios, Inc. v. Grokster, Ltd.,* 545 U.S. 913 (2005) (*Grokster*)
[151] *Sony Corp. of Am. v. Universal City Studios, Inc.,* 464 U.S. 417, 435 (1984). (*Betamax*)

Platforms that do not directly infringe copyright, but facilitate the infringement by others may be potentially liable under the indirect liability theories of contributory or vicarious infringement.[152] Both theories require that there first must be a direct infringement, with any subsequent differences involving implicit incentives for potential indirect infringers, addressing "knowledge" of any direct infringement, the degree to which the indirect infringer has the ability to control the direct infringement and any financial benefit.[153] A person may be liable for contributory infringement if he or she has "knowledge of the infringing activity, [and] induces, causes or materially contributes to the infringing conduct of another,"[154] whereas a court may find a person vicariously liable if he or she, "profits[s] from direct infringement while declining to exercise a right to stop or limit it."[155]

However, in practice service providers are rarely held liable due to a series of safe harbour provisions in US copyright law that immunise those who prove to be good actors by taking immediate steps to combat their users' online infringements.[156] Although service providers have sometimes been held indirectly liable for contributing to user infringements, (*Grokster,*[157] where a P2P file-sharing service provider was held liable for inducing user infringements), the safe harbour rules have protected service providers even when they are generally aware of some user infringements on their sites (*Viacom,*[158] where a hosting service provider was not liable for infringing uploads of users, despite general knowledge of some infringements on its site).

The proliferation of illegal content online, i.e., as in this case copyright infringement, has triggered calls to either abolish, amend or strengthen the US safe harbour rules.[159] The rhetoric is straightforward, platforms benefit from the sharing of content, they have the power to efficiently and effectively guard against illicit content, and if held liable for users' content, they will act to address the spread of illegal content.[160]

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[152] Copyright Alliance, 'Copyright law explained' https://copyrightalliance.org/secondary-copyright-infringement/.
[153] ibid.
[154] *A&M Records, Inc. v. Napster*, 239 F.3d 1004, 1019 (9th Cir.2001) (*Napster*).
[155] *Grokster* (n 150).
[156] Copyright Alliance (n 152).
[157] *Grokster* (n 150).
[158] *Viacom Int'l, Inc. v. YouTube Inc.,* 676 F.3d 19, 32-33 (2d Cir. 2012). (*Viacom*)
[159] N. Elkin-Koren, 'Is It Time to Abolish Safe Harbour?' (2020) 31 Stan L & Pol'y Rev 1 https://ssrn.com/abstract=3344213; P. Samuelson (2021) (n 8) 299.
[160] N. Elkin-Koren (n 159) 1.

However, unlike in the EU with the DSM Directive, these calls have not led to any legislative change in the US.[161] Whilst this thesis does not call for legislative change as such, on either side of the Atlantic, there now does appear to be a growing divergence in terms of platform liability, and clarity and harmonisation as to the position of liability of NFT platforms in both locations, would be of benefit to the developing market.

5.1 Contributory Infringement

Contributory infringement is based on a connection to the infringing activity.[162] For a service provider to be liable for contributory infringement it must have actual or constructive knowledge of the direct infringement, and make a "material contribution" to the direct infringement.[163] With regard to the nature of the "knowledge" required, ignorance of the direct infringement does not necessarily immunise a service provider, since courts have introduced the concept of "wilful blindness", where it may be enough that the defendant "should have" known of the direct infringement, but deliberately chose not to know about it, or at least to take no notice or act upon facts or circumstances that pointed in the direction of infringement.[164] Whilst wilful blindness does not require and affirmative duty to monitor, it does mean that a party cannot "look the other way" in order to avoid confirming instances of infringement.[165]

Liability may also depend on whether a service provider has an ongoing relationship with a direct infringer, by virtue of providing services to the infringer, or where there is no ongoing relationship, it provides equipment to facilitate the direct infringement.[166]

It was held in *Sony*[167] that in the case of an infringer selling a technology that makes infringement possible, if a substantial non-infringing use for the technology exists, then the vendor cannot be found liable. However, this theory was modified in *Grokster,*[168] which held that, notwithstanding the so-called "Sony safe harbour" rule, contributory liability may still be found if there is clear evidence of a service providers intent to induce and facilitate

[161] USCO, Title 17 §512 Report (n 149).
[162] Copyright Alliance (n 152).
[163] *Grokster* (n 150)
[164] *re Aimster Copyright Litigation* 334 F.3d 643, 650 (C.A.7 2003).
[165] Copyright Alliance (n 152).
[166] ibid.
[167] *Sony* (n 151).
[168] *Grokster* (n 150).

infringement. This is the relatively new theory of "active inducement." So, when a service provider has more than mere knowledge that its product may be being used for infringing purposes, and instead is promoting infringement through its statements or actions, the *Sony* test will not immunise a service provider from liability.[169]

5.2 Vicarious Infringement

Unlike contributory infringement, vicarious liability depends on the relationship between the service provider and the direct infringer.[170] For a service provider to be liable for vicarious infringement it must benefit financially from the direct infringement and have both the right and ability to supervise the direct infringer,[171] or as put in *Grokster*, "One…infringes vicariously by profiting from direct infringement while declining to exercise a right to stop or limit it."[172] Actual knowledge is not a requirement, it is the platforms ability to supervise the direct infringer that becomes dispositive.

In summary, whilst decided on a case-by-case basis, if a platform is aware of direct infringement, and it is their intent to induce and facilitate infringement, then they could be liable for contributory infringement. Equally, regarding vicarious liability NFT platforms both benefit financially, and have the ability to supervise a direct infringer. No online-specific variation of what it means to be able to supervise has emerged from the case law although in *Grokster* the US Supreme Court described a failure to implement "filtering tools or any other mechanism to diminish the infringing activity" as underscoring intentional facilitation of user infringement.[173]

However, more likely is that, and as mentioned above, an NFT platform will be able to rely on the safe harbour provisions of US copyright law.

5.3 Safe Harbour Provisions in the US

These provisions are set out in the Digital Millenium Copyright Act (DMCA).[174] Passed in 1998, but broadly similar to the later 2001 Ecommerce Directive, the DMCA added a new

[169] Copyright Alliance (n 152).
[170] ibid.
[171] A. Holland & Others (n 146).
[172] *Grokster* (n 150) 930.
[173] *Grokster* (n 150).
[174] The Digital Millenium Copyright Act of 1998, 17 USC §512, 1201-1205 (2018).

section (§512) to the US Copyright Act, embodying a safe harbour regime and providing immunity for service providers, i.e., providers of online services or network access, or the operators of facilities therefor,[175] from liability for all monetary relief for direct, vicarious and contributory infringement stemming from transmitting, caching, storing, or linking to infringing material.[176] In summary, and provided they meet certain eligibility requirements,[177] §512 provides safe harbour for service providers from liability for monetary relief,[178] and restricts the availability of injunctive relief in various respects[179] for the storage, i.e. hosting, of information which resides on their systems or networks at the direction of users. [180]

Service providers in the US are generally only accountable if they are aware of or have actual knowledge of any infringing activity, and the DMCA states that a service provider is not liable for third-party content that violates copyright law if "upon obtaining such knowledge or awareness, [it] acts expeditiously to remove, or disable access to, the material."[181] So, the hosting safe-harbour is subject to notice-and-takedown rules under which service providers are obliged, after receiving specific notices from rightsholders about the location of specific infringing materials, to remove or disable access to those materials.[182] The approach of the US legislation is broadly similar to the later Ecommerce Directive, however the "notice and takedown provisions" of the DMCA are more involved than those in the Ecommerce Directive, and designed to balance the interests of providers and users of hosting services.[183] Eligibility for the hosting safe harbour is subject to certain conditions; service providers must adopt and reasonably implement a repeat infringer policy;[184] they must inform the Copyright Office about the agent designated by the service provider to receive takedown notices about infringement,[185] and the party claiming infringement must provide a statement that they believe in good faith that use of the material in the manner complained of is not authorised by the rightsholder, its agent, or the law.[186]

[175] 17 USC §512(k)(1)(B)
[176] 17 USC §512(a)-(d).
[177] USCO, §512 of Title 17 Report (n 149) 21.
[178] 17 USC §512(c)1.
[179] 17 USC §512(j).
[180] 17 USC §512(c).
[181] 17 USC §512(c)(1)(a).
[182] 17 USC. §512(c)(1)(c).
[183] S. Stokes (n 120) 65.
[184] 17 USC §512 (i)(1)(a).
[185] 17 USC §512 (c)(2).
[186] 17 USC §512 (c)3(A)(iv).

Service providers do not have a duty to monitor for or affirmatively seek out facts about possible infringing activities.[187] However, they are required to notify users of takedowns done in response to rightsholder demands, and establish a counternotice procedure if users want to contest a copyright infringement claim.[188]

So, in the US the emphasis is on service providers removing any content when notified in order to avoid liability. A service provider is not liable for monetary damages or for injunctive relief, or for any (allegedly) infringing material on their systems or networks unless they know or have been told it is there and have failed to remove it. If the material is not removed, the ISP is not necessarily liable, but it simply means that they could be found liable, whereas if the material in question is removed, there can be no liability – regardless of the outcome of a suit against the user. So, the system's general weighting is therefore towards easy and unquestioned removal.[189] The result of this is that creators report devoting significant time and resources to identifying infringing instances of their content and sending takedown notices, to little effect, with service providers expressing concern about facing an increasing amount of takedown notices.[190]

Most copyright industry groups would have preferred stronger service provider liability rules, but went along with the safe harbour rules as part of legislative compromises about updating copyright rules for the digital age.[191] However, the technological landscape has developed massively since 1998,[192] and the notice and takedown system had been overwhelmed by the sheer scale of notices being sent, increasing burdens on the rightsholders who send them and the service providers who must respond to them under their safe harbour requirements.[193] Also the sheer scale of takedown notices suggests that the system does not work, and is at best a game of "whack-a-mole",[194] demonstrating how the system is not working from the point of view of the rightsholder. Service providers, on the other hand argue that safe harbours have

[187] 17 USC §512 (m).
[188] 17 USC §.512(g)
[189] A. Holland & Others (n 146).
[190] USCO, §512 of Title 17 Report (n 149) 10.
[191] P. Samuelson (2021) (n 8) 1.
[192] USCO, §512 of Title 17 Report (n 149) 31.
[193] ibid 32.
[194] ibid 33.

permitted the amazing growth of the internet, and in particularly the US position as the global leader of the internet's continued development.[195]

In conclusion, currently the balance in the US favours immunity for service providers far more than in the EU.

5.4 US Conclusion

A recent Report to Congress in the US has concluded that whilst an NFT seller who mints an unauthorised NFT may be liable for infringement, the circumstances in which an NFT platform would be liable are not settled.[196] Although NFT platforms could qualify for §512 safe harbours, US courts have yet to address this issue.[197] Clearly, this is an area in need of clarification.

6. Commentary and Recent Developments

There is an awareness that platforms need to be held more responsible. Reliance on the safe harbour rules by the platforms enables them to argue that they are not responsible for content that they make available to the public.

In 2023 the UK Government Department of Culture, Media and Sport (DCMS) commissioned an inquiry of NFTs, publishing a report, "NFTs and the Blockchain: the risks to sport and culture",[198] in which it considered the applicability of the safe harbour regime to NFT Platforms, and concluded that the reliance of platforms on the safe harbour provisions is in part responsible for the prevalence of infringing content on the platforms and a lack of protection for consumers.[199] As raised by Dr Hayleigh Bosher in written evidence during the inquiry, those that mint and sell NFTs are required through a platform's ToS to surrender an extremely broad scope of rights.[200] Consequently, and as also demonstrated by the empirical evidence from this research (Chapter 7 §4), the permissive nature of the ToS and the reliance of the safe

[195] ibid 87.
[196] USPTO & USCO, 'NFTs and IP' A Report to Congress, March 2024 https://www.uspto.gov/sites/default/files/documents/Joint-USPTO-USCO-Report-on-NFTs-and-Intellectual-Property.pdf 22.
[197] ibid 22.
[198] DCMS Committee, *NFTs and the Blockchain* (n 37).
[199] ibid para 14.
[200] H. Bosher *Written Evidence submitted to the DCMS Select Committee Inquiry* (NFT0047) https://committees.parliament.uk/writtenevidence/115626/html/ .

harbour provisions shifts the risk entirely to users and rightsholders, whether they use a platform or not. Contributors to the inquiry called for more protections for creators and consumers,[201] with Dr Bosher calling for platforms to agree a code of practice setting minimum standards, and others arguing that the UK should adopt measures similar to Art 17 DSM Directive. However, as pointed out (and as discussed above in this Chapter at §3.1), Art 17 is likely not to apply and so would need to be adapted to protect artists and consumers from the sale of infringing NFTs.[202]

The report concluded with the following recommendation:

> *IP laws and copyright protection are central to enabling artists to create, innovate and make a living from their work. Emerging technologies that undermine these protections have a profound impact on individual artists and the UK's world-leading creative industries more generally. We recommend that the Government engages with NFT marketplaces to address the scale of infringement and enable copyright holders to enforce their rights. The Government should also address the impact of safe harbour provisions by introducing a code of conduct for online marketplaces operating in the UK, including NFT marketplaces, that protects creators, consumers and sellers from infringing and fraudulent material sold on these platforms.*[203]

From a US perspective, in a copyright roundtable discussion for the US Report to Congress,[204] Jeff Gluck notes how, "NFT marketplaces can't hide behind safe harbour protection if they curate and play an active role in selection the art on their platforms, which most of them do, and further, if the NFT marketplaces are using their own technology to mint the NFTs, create the NFTs for the creators, then they're participating, even aiding the infringement," with Aon also commenting that market places should be required to verify, at least to some extent, the ownership of assets associated with NFTs sold on the marketplace.[205]

So, the lack of certainty surrounding the legal nature of NFTs encourages platforms to hide behind the safe harbour rules and overly permissive ToS, using both as a shield to avoid more expensive business models requiring robust checks and balances and responsibility for authenticity. Rightsholders do not necessarily have the resources or technical ability to monitor illegal behaviour, and encounter difficulties enforcing their rights when notifying the platforms of unauthorised NFTs. The law both in the EU/UK and the US is uncertain as NFT platforms

[201] DCMS Committee, *NFTs and the Blockchain* (n 37) para 16.
[202] ibid para 17.
[203] ibid page 21, para 1.
[204] USPTO & USCO Report to Congress (n 196) 22.
[205] ibid 22.

do not fit neatly within the existing legal categories and legal frameworks. There is a need to address the legal classification of NFT platforms and applicable liability regimes, on order to promote compliance and certainty for all NFT market actors.[206]

We need to prevent platforms from designing technologies for the avoidance of liability rather than efficiency. If they knew where they stood and there was certainty in the law, they would be less inclined to tip the balance so far to the liability of the user. Lital Helman argues that having a copyright law policy that depends on technical details has severe costs. It creates incentives for platforms to be designed for the avoidance of liability, rather than efficiency; it generates severe uncertainties; and most importantly, it provides limited tools for policy makers to decide matters based on substantive considerations and market effects, rather than on random technicalities.[207]

6.1 How can NFT Platforms be Made More Responsible?

In China, the Hangzhou Internet Court held a Chinese NFT trading platform responsible for copyright infringement for the conduct of its users.[208] The court ruled that an NFT platform did not qualify for immunity under China's safe harbour rules as it failed to exercise an adequate duty of care in monitoring its platform for infringement.[209] The Court concluded that an NFT platform had a higher duty of care than traditional online platforms because it could conduct *ex ante* review of the digital works on its platform without incurring additional cost and because it received direct economic benefits by collecting gas fees when minting NFTs and commissions on every transaction. [210]

The plaintiff was the rightsholder to a copyrighted work. A third party minted an NFT from the work and published it on the defendant's NFT platform. The plaintiff requested that the platform delete the work, claw back from the blockchain and destroy the previously sold infringing NFT, and eventually sued the platform for failure to protect its right of dissemination under copyright principles. The defendant argued that its obligation was only to review the

[206] F. Portante D'Alessandro, 'Mint or Miss? Determining liability for NFT platforms in the EU' (*KULeuven*, 08 October 2024) https://www.law.kuleuven.be/mint or miss.
[207] L. Helman & O.Tur-Sinai, 'Bracing Scarcity: Can NFTs Save Digital Art?' (5 March 2023) Fla.St.U.L.Rev, Forthcoming https://ssrn.com/abstract=4378570.
[208] *Shenzhen Golden Idea Cultural and Creative Co., Ltd v Hangzhou Bigverse Technology Co., Ltd* (2022) Zhejiang 0192 Minchu No. 1008 (*Bigverse*).
[209] ibid.
[210] ibid.

notification and conduct post-notification deletion, which it had done. However, the court held that the defendant as a platform has an *enhanced duty of care* given the nature of NFTs and should be responsible for the infringement, i.e., that it should have taken greater steps to confirm authorisation before publication, given the post-publication challenges to spotting infringement and the anonymity of the medium.[211]

The case relates to Chinese law so is of limited application and influence. However, there are some interesting issues to consider. Firstly, the Court held that it is copyright infringement to mint an unauthorised NFT, which is, as discussed in Chapter 9, something that lawyers and academics in the EU/UK/US are still grappling with. Secondly, they imposed an "enhanced duty of care" on the NFT platform, as NFTs are inherently a new, risky and technically complicated development. As NFT platforms profit from the minting and trading of NFTs, it seems only right that they should shoulder and take more responsibility for infringement.

The focus of this Chapter so far has been on the platforms providing content, and their direct/indirect liability for communicating infringing content to the public. It concludes how it may be possible to find a platform directly liable for communication to the public as per Art 3(1) Infosoc, or within the UK indirectly liable for authorising the illegal activities of its users. The position is less clear in the US,[212] although to date the emphasis the US has focused less on the direct liability of service providers than in the EU. However, in both cases the law is uncertain, and any finding of liability presupposes that a court would find that the minting of an unauthorised NFT is in fact an infringement.

The legal classification of NFT platforms is complex due to their dual nature and diverse characteristics.[213] As with NFTs generally, as discussed in rights (Chapter 8) and infringement (Chapter 9), due to the relative novelty of NFTs and the nature of the platforms, the platforms do not fit neatly with the existing categories and liability frameworks.[214] One the one hand NFT platforms could be understood to be communicating works to the public, as is the focus

[211] J. Harding, 'China Holds Platform Liable for Sales of Infringing NFTs' (Winston & Strawn LLP, 2 August 2022) https://www.winston.com/en/blogs-and-podcasts/notes-from-the-china-desk/china-holds-platform-liable-for-sales-of-infringing-nfts.
[212] USPTO & USCO Report to Congress (n 196) 22.
[213] F. Portante D'Alessandro (n 206).
[214] ibid.

of this Chapter. On the other hand they could be additionally operating as marketplaces by displaying NFTs for sale.

This brings into question the evolving nature and characteristics of NFTs themselves. Now classified as personal property,[215] but also, and as discussed in Chapter 8, capable of potentially being classified as tangible. If an NFT is classified as a tangible CryptoAsset and subject to the exclusive right of distribution, might an NFT platform become directly or indirectly liable for distributing infringing copies as per Art 4 InfoSoc which grants rightsholders the exclusive right to authorise or prohibit any form of distribution to the public by sale or otherwise? Given the complexity of the case law surrounding communication to the public, might not an action for infringement of distribution be more straightforward for rightsholders, and with a more certain outcome? In terms of indirect liability within the UK, the CDPA provides that a defendant may be also be held indirectly liable for, inter alia, possessing, dealing or distributing an article which is, and which he knows or has reason to believe, is an infringing copy.[216] As discussed in Chapter 3 § 2.4, and as per s 107 CDPA, such an action may also incur a criminal liability.

Finally, given the acceptance of NFTs as personal property, in terms of actions brought by users and rightsholders against NFT platforms as "marketplaces" issues of property law and consumer law also become relevant here in relation to NFTs as tangible goods. Outside of copyright law, within the UK, specific rules seek to protect consumers such as Unfair Contract Terms Act 1977 and the Consumer Rights Act 2015, meaning that acquirers interests, including consumer protection warranties could counterbalance the broad ToS and misleading terminology.[217] As argued by P. Mezei property and consumer law could play a greater role in rebalancing the interests of creators and users. [218]

7. Conclusion

This is a complex and, in relation to NFTs, uncertain area of law, with the conclusion being that rightsholders struggle to enforce their rights against the platforms. Currently the onus is

[215] *Osbourne* (n 144).
[216] CDPA s 23.
[217] P. Mezei, 'Hop on the Roller Coaster – New Hopes for Digital Exhaustion?' (2022) 71(11) GRUR International 1017 https://ssrn.com/abstract=4256645.
[218] ibid.

on an artist to monitor content and check for infringements. Certainly, and as evidenced by the empirical research, NFT platforms could be doing a do a lot more in terms of verification (Chapter 6 §6) and the prevention of copyminting (Chapter 7 §3.2) However, the potential introduction of codes of conduct or global standards aside, the threat of liability *ex post* would encourage NFT platforms to take a more proactive role in *ex ante* copyright enforcement.

As discussed in the previous Chapters 8 and 9 in this Part IV, this thesis recommends that the law be interpreted to accommodate NFTs, in order that platforms be made accountable within the existing law. Classifying CryptoAssets (therefore including NFTs and CryptoArt) as tangible personal property would enable the application of the exclusive right of distribution when considering the exploitation and protection of CryptoArt by rightsholders, together with increased consumer protection.

This would clarify and harmonise what is an uncertain position in law, enable rightsholders to bring successful claims against NFT platforms when found to be trading unauthorised NFTs, and provide NFT platforms with a certain legal environment in which to properly develop their business models. This position would ensure a level playing field between digital artists and their IRL counterparts, a high level of protection for IPR for rights holders[219] and foster innovation and growth in the technology.

[219] InfoSoc 9-11

Part V – Why Should the Law Evolve?

Having discussed how NFT platforms are applying the law in practice in Part III, and analysed how the law could be interpreted to bridge the gap between the law and the practice in Part IV, this Part now turns to justifying, from a theoretical point of view, why this should be the case.

Chapter 11: Justifying NFTs

1. Introduction

Based on empirical research and doctrinal analysis, this thesis recommends how copyright law in relation to NFTs, and in particular CryptoArt, requires clarification so that rightsholders may better protect, exploit and enforce their rights, and NFT platforms may be held more accountable for unauthorised NFTs minted by their users.

This Chapter justifies this recommendation from a theoretical intellectual property rights (IPR) position. As discussed in Chapter 2, there is a demand for artists to be able to exploit and protect their digital art works. And, whilst the NFT market has undoubtedly suffered from hype, volatility and bad players, from a technological view point, NFTs are "out of the box", still in development and here to stay. NFTs are more than just a trend or a fad; by creating digital scarcity they have the potential to facilitate a complete shift in how we conceive and transfer value online. Not only do NFTs alter how we trade, in this case CryptoArt, but they have the potential to redefine in the long term the very essence of how value and ownership are perceived and protected in the digital age.[1]

As highlighted in Chapter 2, creative works are by default public in nature, meaning that they are non-excludable and non-rivalrous. Copyright law overcomes this by generating artificial scarcity through a set of exclusive rights granted to an author.[2] However, given the ability to reproduce unlimited, perfect copies on the internet, artificial scarcity is harder to enforce online. The protection and enforcement of digital copyright has therefore been a particular

[1] M. Dalal, 'Are NFTs The Future of Digital Art and Collectibles' (*YourStory*, 22 October 2023) https://yourstory.com/2023/09/digital-innovation-nfts-reshaping-ownership.
[2] L. Helman & O.Tur-Sinai, 'Bracing Scarcity: Can NFTs Save Digital Art?' (5 March 2023) Fla.St.U.L.Rev, Forthcoming https://ssrn.com/abstract=4378570 13.

issue since the beginning of the internet. With their ability to create digital scarcity, NFTs have the potential to rebalance digital copyright protection.

This chapter justifies NFTs using three main themes. It begins with a brief summary of the main theories used to justify IPR, before then justifying copyright protection for NFTs. It then questions the role that NFTs can play in fixing the digital "copyright imbalance", before asking whether NFTs can solve the issue of digital exhaustion.

2. Justifying Copyright Protection for NFTs: the Fundamental Theories

The literature in this area is vast, disparate and draws on a number of disciplines. Legal, philosophical, social, economic and even religious arguments have all been used to justify the protection of intellectual property (IP), resulting in the use of a wide variety of metaphors and terms from other disciplines, including fruits of labour, desert and reward, natural rights, social justice and public interest, developmental needs, human rights, protectionism and free trade, and free-riding.[3]

In relation to copyright the literature also commonly identifies the "author's right" tradition of civil law countries (with its deontological principles of natural rights) to the "copyright" tradition of common law countries (with its more consequential principles of utilitarianism).[4] With author's rights, an author is entitled to the protection of his work as a matter of right and justice. There is no social necessity requirement. This contrasts with the utilitarian perspective, the purpose of which is to stimulate the production of the widest possible variety of creative goods at the lowest possible price.[5] However, and as pointed out by Goldstein & Hugenholtz, this distinction should not be overstated.[6] An explicit natural rights strain did not in fact emerge in the European continent until late in the nineteenth century, and which was preceded by a distinctly utilitarian ideology.[7] Equally, whilst a utilitarian theme runs through much of English and American copyright law, so too does the argument that an author has a natural right to profit from his creativity and labour,[8] leading to what is termed as the "incentive" theory, i.e.,

[3] G. Dutfield & U. Suthersanen (2020) *Global IP* (2nd edn, EE 2020) 21.
[4] P. Goldstein & P. Bernt Hugenholtz, *International Copyright* (4th edn, OUP 2019) 1; Dutfield & Suthersanen (2008) *Global IP Law* (EE 2008) 51; E. Derclaye & T. Taylor, 'Happy IP: Replacing the law and economics justifications for IPR with a well-being approach' (2015) 37(4) EIPR 198.
[5] P. Goldstein & P. Bernt Hugenholtz (n 4) 13.
[6] ibid 6.
[7] ibid 5.
[8] ibid 5.

the roots of UK and US copyright law mix utilitarian and natural rights. Hugenholtz also argues that these themes are gradually converging, "under the auspices and combined influence of international harmonisation and a growing international information economy."[9] Nevertheless, the themes do continue to play a role in the literature, and given the global nature of NFTs, need to be understood when further examining the theories justifying copyright, and consequently copyright protection for NFTs.

However, to frame any discussion, this section to begins with an examination of the four main analytical constructs or "theories" as identified by William Fisher, and which outline the fundamental theories justifying copyright.[10] These are (i) utilitarian for maximising net social value, (ii) Lockean (the right to the fruits of one's intellectual labour), (iii) protection of personality in works and (iv) promotion of cultural development.[11] The second and third theories relate to natural rights, as opposed to the utilitarian basis of the first. The fourth theory discusses how the literature has continued to build on the main theories.

2.1 Utilitarian

The predominant theory,[12] under which copyright is designed to encourage creativity for the benefit of society at large.[13] Also referred to as the "incentive theory,"[14] or the "incentive paradigm"[15] this translates into how, because creations are easily copied, an author has insufficient incentive to create, as it is not possible to be adequately compensated for the effort required to produce the work.[16] It is desirable that intellectual outputs are produced, and therefore some protection must be granted to an author. Hence copyright grants exclusive rights. i.e., a monopoly to an author for a limited time.[17]

[9] ibid 5.
[10] W. Fisher, 'Theories of IP' in Stephen R. Munzer (ed), *New Essays in the Legal and Political Theory of Property* (CUP 2001) https://cyber.harvard.edu/people/tfisher/iptheory.pdf; N. Wilkof, 'Theories of IP: Is it worth the effort?' (2014) 9(4) JIPLP, 257.
[11] W. Fisher (n 10).
[12] E. Derclaye & T. Taylor (n 4) 198.
[13] L. Helman & O. Tur-Sinai (n 2) 13.
[14] E. Derclaye & T. Taylor (n 4) 198.
[15] H. Rigby & N Koutras, 'Let's Reimagine IPR Regime: the Australian Perspective' (School of Business Law, Edith Cowan University, Australia 2022) https://ojs.law.cornell.edu/index.php/joal/article/view/118/111 2.
[16] E. Derclaye & T. Taylor (n 4) 198.
[17] ibid 198.

Focussing on the maximisation of net social welfare, i.e., how to balance the social costs and benefits associated with giving legal effect to IP rules and laws,[18] this thinking forms the basis of pre-modern intellectual privileges in Venice and England (starting with the Statute of Anne in 1710), as well as modern statutory rights based on constitutions, such as the US constitution.[19] The US Constitution authorises Congress "[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."[20] In the EU, InfoSoc is justified on the basis that copyright, "protects and stimulates the development and marketing of new products and services and the creation and exploitation of their creative content,"[21] and copyright harmonisation within the EU is justified on the grounds of fundamental principles of European law including "intellectual property, and freedom of expression and the public interest."[22]

The utilitarian rationale also calls into play economic justifications, in that given their public nature, there exists no scarcity in creative goods, leading to market failure,[23] and "free-riding".[24] As public goods, works of art are non-excludable and non-rivalrous, meaning that once published, it is impossible to prevent someone from accessing them, and their enjoyment by one person does not affect the ability of others to enjoy them simultaneously. Copyright tackles such market failure by generating artificial scarcity through a set of exclusive rights that forbid the copying and sharing of creative works, thereby creating a market around the creative work, allowing artists to recoup the investment involved in creating the work, make a profit and thus incentivise them to engage in the creative process.[25]

However, copyright comes at a cost. Broadening exclusive rights increases the incentive to create, but limits access to creative works, to the detriment of potential consumers of art and culture. Copyright requires "a difficult balance between the interests of authors and inventors in the control and exploitation of their writings and discoveries on the one hand, and society's competing interest in the free flow of ideas, information, and commerce on the other hand."[26] Striking the correct balance between access and incentives is the central problem in copyright

[18] W. Fisher (n 10) 1.
[19] G. Dutfield & U. Suthersanen (2008) (n 4) 53.
[20] US Constitution 1787 Art I, §8 cl.8.
[21] InfoSoc Recital 2
[22] InfoSoc Recital 3; G. Dutfield & U. Suthersanen (2008) (n 4) 53.
[23] L. Helman & O. Tur-Sinai (n 2) 13.
[24] W.M. Landes & R.A. Posner, 'An Economic Analysis of Copyright law' (1989)18(2) JLS 325.
[25] L. Helman & O. Tur-Sinai (n 2) 13.
[26] *Sony v. Universal City Studios, Inc*., 464 U.S. 417, 429 (1984).

law,[27] and as pointed out by William Fisher, it has proved devilishly difficult to create robust ways to measure inputs, outputs and process.[28]

2.2 Lockean

One of the principal natural rights theories used in support of property rights is the labour theory, based on the work of John Locke who argued that every person who labours upon resources that are "held in common" has a natural right to the fruits of their labour,[29] with the added proviso that "there is enough, and as good left in common for others", and that a labourer does not waste resources by taking more than they need for their own use.[30] This is a theory of natural law, which views property rights as pre-existing in the state of nature. Extrapolated by consequential reasoning to justify IPR, this theory has been criticised for being implausible seventeenth century rhetoric being applied to modern intangible rights.[31] However, although the theory may be dated, Dutfield & Suthersanen argue that it may be of more, not less, importance today due to the continuous encroachment of technology over intangible matter, hence it retains utility in urging us to consider the need for the existence and maintenance of a "public domain" or an "intellectual commons."[32]

2.3 Personality Theory

Derived from the writings of Kant and Hegel, the premise of this third approach is that private property rights are crucial to the satisfaction of fundamental human needs.[33]

According to Hegel's personality theory, property is necessary as a means for developing and realising one's personality, and an individual needs control over external objects in order to exercise their will and achieve self-identity.[34] This theory has been used to justify IP, as intellectual assets are an individual's creation and thus reflect their personality, and is used in support of arguments calling for the strengthening of authors' rights, and in particular moral rights, including the right of attribution and the right of integrity.[35]

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[27] W.M. Landes & R.A. Posner (n 24) 326; H. Rigby & N Koutras, (n 15) 9.
[28] W. Fisher (n 10); N. Wilkof (n 10).
[29] J. Locke, *Two Treatises of Government* (1690) (P. Laslett ed., CUP 1988) 290-9.
[30] ibid 288.
[31] G. Dutfield & U. Suthersanen (2008) (n 4) 54; P.S. Morris, 'The contemporary ideological legitimacy of global IPR' (2020) IPQ 1 44-73, 45.
[32] G. Dutfield & U. Suthersanen (2008) (n 4) 55.
[33] W. Fisher (n 10) 6.
[34] G.W.F. Hegel, *Philosophy of Right* (1821) (S.W. Dyde trans., 1996) 51-52.
[35] L. Helman & O. Tur-Sinai (n 2) 26.

2.4 Promotion of Cultural Development

Finally, and more recently, a fourth theory, based on concepts of justice and fairness, is identified in the literature.[36]

William Fisher identifies this as a "Social Planning Theory," justifying a just and attractive culture,[37] and which differs from the utilitarian theory in that it seeks to go beyond the notion of "social welfare" to a much broader vision of society serviced by IP.[38] He concludes that we should strive to create a combination of rules that maximise consumer welfare by optimally balancing incentives for creativity with incentives for dissemination and use. In addition, citizens should have wide access to information and ideas, a crucial requirement for the attainment of self-determination and self-expression, and a rich artistic tradition with all persons capable of participating in the process of cultural development and being respectful of others work.[39]

John Rawl's book, *A Theory of Justice*, is based on a concept of foundational pluralism and provides tools to imagine and create a just society.[40] Dutfield & Suthersanen suggest how, using these tools, they would opt for a set of principles that promote a society fair to everyone,[41] adding that you cannot treat "economic efficiency" as the primary criterion for "good" IP rules as IPR are more than a class of business rights.[42]

Merges develops a theory of IP also based on the Rawlsian concept of foundational pluralism.[43] He rejects the utilitarian justification of IP partly because of its complexity and failure to demonstrate with solid empirical evidence how it can reasonably justify IP.[44] He argues that the justification for IPR is better explained through strong philosophical and liberal traditions and develops a liberal theory (pluralism) in which IP operates freely. He argues for a number

[36] W. Fisher (n 10), J. Silbey, *Against Progress* (SUP 2022); L. Helman & O.Tur-Sinai (n 2); P. Goldstein & P. Bernt Hugenholtz (n 4), G. Dutfield & U. Suthersanen (2008) (n 4), N. Weinstock Netanal, 'Copyright and a Democratic Civil Society' (1996) 106(2) Yale L.J. 283; P.S. Morris (n 31); R.P. Merges, *Justifying IP* (HUP 2011); E. Derclaye & T. Taylor (n 4).
[37] W. Fisher (n 10).
[38] N. Wilkof n 10) 257.
[39] W. Fisher (n 10) 23.
[40] J. Rawls, *A Theory of Justice* (HUP 1971).
[41] G. Dutfield & U. Suthersanen (2008) (n 4) 47.
[42] ibid 48.
[43] R.P. Merges (n 36) 5-10.
[44] P.S. Morris (n 31) 59.

of mid-level principles namely: efficiency, non-removal (from the public domain), dignity and proportionality, as a pluralistic framework for justifying IPR.[45] Merge's theory on pluralism supports a democratic market space that promotes various rights, thereby justifying other rights in that market space. An essential advancement of this theory is the harmonising of rules, and how various actors can innovate and produce new goods that support society in general but fall back on the foundation core of a democratic society – rights in property. Rights in property within a pluralistic marketplace provide for the owners of IP to innovate and develop a fairer and diverse society with spill-over benefits for other societies, so that harmonisation can take place through new rights paradigms.[46]

Derclaye & Taylor also reject utilitarian rationales based on the economic aspect of utility, proposing instead that IPR should be justified using a theory neutral approach based directly upon well-being, rather than using income as proxy.[47] Helman & Tur-Sinai identify how copyright policies endeavour to promote principles of distributive justice and cultural diversity.[48]

Netanal argues how the primary goal of copyright is not allocative efficiency, but the support of a democratic culture.[49] Copyright fosters democracy and free speech by sustaining a class of independent authors who support themselves from their works without depending on state subsidies or private handouts, and are therefore immune to the corrosive effects of such patronage.[50] His "democratic paradigm" outlines how copyright provides an incentive for creative expression thus "bolstering the discursive foundations for democratic culture and civic association".[51] Equally, it supports a sector that is relatively free from reliance on state subsidy, elite patronage and cultural hierarchy. This democratic paradigm requires that copyright protection be sufficiently strong to support both of these functions. At the same time, it would accord authors a limited proprietary entitlement, designed to make room for, and to encourage, many transformative and educational uses of existing works.[52]

[45] ibid 59.
[46] ibid 61.
[47] E. Derclaye & T. Taylor (n 4)197.
[48] L. Helman & O. Tur-Sinai (n 2) 28.
[49] N. Weinstock Netanal (n 36) 288.
[50] ibid 288.
[51] ibid 288.
[52] ibid 288.

Arguments supporting the promotion of cultural development figure prominently in debates concerning the appropriate scope of copyright protection on the internet.[53] The transformative power of the internet lies in its capability to decentralise the production and dissemination of knowledge, supporting the argument that digital copyright should be shaped in a way that is consistent and supportive of democracy.[54]

2.5 Summary

This section demonstrates how the distinction between each of these theories is somewhat blurred. Some are complementary, with others contradictory, and nearly all *ex post facto* based on existing regimes and histories.[55] None of the theories is perfect, and all have been criticised in the literature. However, the highly successful deployment of the various justifying rhetorics has helped to ensure a tremendous extension of scope,[56] but rights have been extended without any empirical evidence showing that authors would produce, and publishers publish fewer works if the extension were not given.[57] There is very little solid evidence that incentives either do or do not cause creators to create new works, with Goldstein & Hugenholtz concluding that copyright legislation in common law jurisdictions fails any strict utilitarian measure.[58] In practice, law making in both common and civil jurisdictions produces similar results; extending rights into nearly every corner where a work's value can be economically exploited.[59] How relevant theoretical justifications remain when considering any extension of copyright protection is a moot point; more relevant today are political arguments regarding the creation of new rights and the imposition of limits on these rights.[60] Commercial importance of IP has grown since the 19th Century, in hand with the increasing pressure on businesses and economies to be competitive, with profound changes since the 1970s (WIPO) and then more recently (TRIPS) and the internet (WCT, WPPT) and a willingness for national governments keen to enhance the competitiveness of their economies and to grant the demands of transnational corporations.[61]

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[53] N. Elkin-Koren, 'Cyberlaw and Social Change: A Democratic Approach to Copyright Law in Cyberspace' (1996) 14(2) Cardazo Arts & Ent. L.J. 215.
[54] ibid 216.
[55] G. Dutfield & U. Suthersanen (2020) (n 3) 19.
[56] ibid 21.
[57] P. Goldstein & P. Bernt Hugenholtz (n 4) 17.
[58] ibid 17.
[59] ibid 17.
[60] ibid 7.
[61] G. Dutfield & U. Suthersanen (2008) (n 4) 22.

Copyright protection has therefore been expanded to support commercial development, with this approach assuming that, far from inducing the creation and dissemination of new expression, copyright serves as a vehicle for directing investment in existing works.[62] Yet corporations are more ambivalent about natural rights justifications and tend to eschew individualism-based rhetoric, although without abandoning it entirely whenever it suits them to revive it.[63] The point here is that corporations have a different agenda to individual authors, and beyond any political arguments, the democratising impact and decentralisation of NFTs in the digital sphere is something to be embraced and encouraged.

There is a worldwide consensus that copyright and authors' rights advance the important goals of authorial autonomy and cultural diversity.[64] Copyright fundamentally fosters democracy and free speech by supporting a class of independent authors who can support themselves.[65] Copyright is a state measure that uses market institutions to enhance the democratic character of civil society,[66] and its primary goal is not allocative efficiency, but the support of a democratic culture,[67] a position that has become diluted since the advent of the internet.

Given that global IP rules are codified in the TRIPS Agreement as private rights,[68] international law can no longer be viewed as the sole domain of nation states. Instead, it must be seen in a new light: a right to consider how private rights are transposed beyond the borders of sovereign states, and the response to any fundamental right in property.[69] The global information economy is subject to international agreements and to a growing trend for the harmonisation of IP laws.[70] NFTs have role to play in fostering democracy on the internet, and rebalancing authors autonomy in the digital sphere on an international basis.

2.6 Justifying NFTs?

NFTs support all of the justifications for copyright protection. They have the potential to create digital scarcity, and an NFT, as an asset, can be bought and sold independently on the

[62] N Weinstock Netanal (n 36) 286.
[63] G. Dutfield & U. Suthersanen (2008) (n 4) 48.
[64] P. Goldstein & P. Bernt Hugenholtz (n 4) 6.
[65] ibid 7; R.P. Merges (n 36) 247.
[66] N Weinstock Netanal (n 36) 288.
[67] ibid 288.
[68] TRIPS Agreement, Annex 1C of the Marrakesh Agreement establishing the WTO, 15 April 1994, 1869 UNTS 299, 4th Recital.
[69] P.S. Morris (n 31) 45.
[70] H. Rigby & N. Koutras (n 15) 2.

blockchain, even as the underlying work associated with that NFT continues to be freely available on the internet. NFTs therefore have the ability to revive scarcity and authenticity in the digital sphere, whilst at the same time allowing access to the works.[71] They generate authenticity by enabling the author to designate one file as original, even while copies of the file continue to be copied and distributed online.[72]

Exclusivity is granted to artists in return for the publication of their works. So, from a utilitarian perspective NFTs maximise net social welfare. They incentivise the creation of new works for the benefit of society, and the cost to society is reduced given that the underlying art remains accessible to the public.[73] The introduction of authenticity online allows art markets to migrate into the digital sphere, encouraging the incentive to create, and the creation of new market opportunities.[74] From an economic point of view, NFTs fix the market failure previously experienced by digital artists through their inability to control and monetise their digital art works, and economic well-being depends on achieving a workable market economy.[75]

From a natural rights point of view, NFTs enable artists to benefit from the "fruit of their labour", obtain royalties from future sales, and maintain control of their self-identity and moral rights. The pseudonymous nature of NFTs allows an artist to choose how much of their identity to reveal. They can decide how and when their personal expressions are shared and distributed, and acquire recognition, respect and appreciation from others.[76]

However, importantly NFTs also promote cultural diversity. The internet is a democratic and decentralising force, which needs to be protected and promoted for the masses, rather than controlled by a few. NFTs promote participation and diversity in the art world, preventing discrimination against those who would otherwise be excluded from the traditional art market, thereby promoting and enriching society and cultural diversity.[77] They reduce the reliance on third parties and intermediaries, enabling a more just distribution of the value produced by creative works. They enable artists to find and access collectors, make a living, reduce third party profits, and prevent the control of the traditional gatekeepers to the art market which

[71] L. Helman & O. Tur-Sinai (n 2) abstract.
[72] ibid 4.
[73] H. Rigby & N. Koutras (n 15) 7.
[74] L. Helman & O. Tur-Sinai (n 2) 16.
[75] G. Dutfield & U. Suthersanen (2008) (n 4) 49.
[76] L. Helman & O. Tur-Sinai (n 2) 27.
[77] ibid 28.

affect diversity and create barrier to entry.[78] Finally, they also create a level playing field between digital artists and their IRL counterparts.

This thesis is not recommending for the law to be rewritten, or for the creation of a new class of copyright, but that policy be shifted so as to accommodate, support and include NFTs within the current law, and so that these positive aspects be given a chance to flourish in order to fix the current copyright imbalance on the internet in relation to digital art.

Dutfield & Suthersanen suggest how there are two reasons for analysing IP justifications.[79] The first accepts the likelihood that conventional justifications have shaped the contours of IP law. Accordingly, such analysis provides a critical lens to view how the boundaries and extent of specific IPR are pitched for the benefit of current and future creators and entrepreneurs. Secondly, it helps us to imagine what an optimal and contextually sensitive IPR framework might look like; one that gives creators and entrepreneurs their dues, but achieves positive outcomes for follow-on creators and entrepreneurs and the general public that, in the absence of IP, would be precluded. So by exploring the justifications for copyright, the point is not necessarily to critique such justifications, but to highlight how there is no justifiable reason why the law cannot be adapted to incorporate NFTs, i.e., it is hard to argue that they should not exist and that, given their potential for positive application, not supported.

3. Can NFTs Fix the Digital Copyright Imbalance?

Having outlined the fundamental theories justifying IP and copyright law, and how the theories support the development of NFTs this section will now discuss the role that NFTs have to play in fixing the "digital copyright imbalance".

Digital technology challenges copyright's already uneasy accommodation of public access with private ownership.[80] Copyright protection balances the cost of limiting access to a work with the benefits of providing incentives to create the work,[81] and has traditionally created artificial scarcity around works of art by granting exclusive rights to creators that limit the

[78] ibid 29.
[79] G. Dutfield & U. Suthersanen (2020) (n 3) 19.
[80] N. Weinstock Netanal (n 36) 285.
[81] W.M. Landes & R.A. Posner (n 24) 326.

ability of others to reproduce or distribute their work. Striking a correct balance between such access and incentive is the central problem of copyright law.[82]

The problem created in the digital space is that once a creative work is freely available online, anyone can make perfect limitless digital copies, thereby undermining the traditional copyright balance.[83] Anyone can access a good even if they have not contributed to the cost of producing it, and in the alternative, the costs involved to exclude so called "free-riders" i.e., non-payers for the use of protected work available online, are such that it would be inefficient to exclude them in practice.[84] This means that, and as witnessed by the futile fight against file-sharing in the early 2000's,[85] the artificial scarcity created by copyright is harder to enforce online than IRL, thereby permitting free-riding on an industrial scale, resulting in artists struggling to monetise their work, and jeopardising any incentive to create digital art in the first place.[86] In the absence of impediments for free-riding online, the prices of works that become available in a competitive market could fall to near zero.[87] In conclusion, nowhere is the fate of creative professionals under more pressure than in the world of digital content,[88] which creates the risk that the creator of a digital work will have insufficient incentive to engage in creative invention and production.[89]

At the same time digital technology provides copyright owners with the technological means to restrict access to digital works to a far greater extent than is possible with physical copies.[90] However, as discussed in Chapter 1 §3 and Chapter 2, legislative attempts to strengthen digital copyright through the use of DRMs [91] have failed to address the copyright balance,[92] favouring the larger, more powerful players in the CIs, rather than individual creators.[93]

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[82] ibid 326.
[83] A. Dash (2021) 'NFTs Weren't Supposed to End Like This' (*The Atlantic*, 2 April 2021) https://www.theatlantic.com/ideas/archive/2021/04/nfts-werent-supposed-end-like/618488/; H. Rigby & N. Koutras (n 15) 3.
[84] H. Rigby & N. Koutras (n 15) 3.
[85] L. Helman & O. Tur-Sinai (n 2) 4.
[86] ibid 4.
[87] H. Rigby & N. Koutras (n 15) 3.
[88] R.P. Merges (n 36) 237.
[89] H. Rigby & N. Koutras (n 15) 4.
[90] N. Weinstock Netanal (n 36) 285.
[91] WCT Arts 11-12 & WPPT Arts 18-19.
[92] EP (2018) EP *Resolution on DLTs and Blockchains* (3 October 2018) 2017/2772(RSP) 23; S. Stokes (2019) *Digital Copyright* (5th edn, Hart, 2019) 1.
[93] C. Doctorow, 'The EU Hired a company to make a Video' (*Boing Boing*, 7 March 2019) https://boingboing.net/2019/03/07/govt-paying-lobbyists.html; M. Kretschmer, 'Digital: The End of an Era' (2003) 25(8) EIPR 333; M. Zeilinger, 'Digital Art as Monetised Graphics' (2018) 31 Philos. Technol.15–41 https://doi.org/10.1007/s13347-016-0243-1 16.

Public access to protected works available online is therefore an issue of growing social concern, since private incentives to recover finance investments from public uses of creative works take precedence over the benefit of users at large. What matters more are the private interests of rightsholders which, based on the exercise of property rights and reliant on works produced, entail a general right to exclude society from using these works.[94]

However, the public domain, where a wealth of information is free from barriers to access or reuse is critical to our societies social and economic wellbeing.[95] The information society has pushed the public domain issue to the forefront of copyright debates, with the concept of the information commons.[96] Questions have been asked in the literature as to how information should be conceived of, in legal terms, to effect IPR creation for its creator whilst at the same time remaining available to the public for its use and benefit, or whether it is time to accept that the information commons is a public space that can no longer be tamed?[97]

But, adhering to a minimalist position in relation to IPR fails to take into account the need for artists to maintain autonomous, self-reliant authorship, especially in the face of rapidly changing markets and technology.[98] IPRs reward and recognise individual achievements and bring with them a greater scope for individual autonomy, and they are not inconsistent with the promotion of a flourishing environment for digital media i.e., CryptoArt. To the contrary, copyright is essential for this goal and individual control over individual assets.[99]

This thesis takes the position that, in the context of NFTs, and in contrast to a minimalist digital copyright protection policy, robust copyright protection remains the best policy. Any minimalist protection arguments, on the basis of "information wants to be free",[100] or how curtailing property rights promotes collective creativity fail with NFTs, as robust copyright protection for NFTs provides parity and certainty for digital artists, enabling them to exploit and control their assets. Minimalist protection arguments come into play more when

[94] H. Rigby & N. Koutras (n 15) 18; P. Baldwin, *The Copyright Wars* (PUP, 2016).
[95] H. Rigby & N. Koutras (n 15) 10.
[96] ibid 10.
[97] ibid 10.
[98] N. Weinstock Netanal (n 36) 288.
[99] R.P. Merges (n 36) 238.
[100] J.P. Barlow, 'A Declaration of the Independence of Cyberspace' (*EFF.org*, 8 February 1996).

considering the digital copyright stranglehold by the larger corporations in the CI, but here we are talking about increasing protection for digital artists and not for the large CI corporations.

In relation to the existing "remix culture", creative works have always involved borrowing and originality is a "socially constructed term."[101] For younger internet users, the "ability to remix media, hack products, or otherwise tamper with consumer culture is their birthright, and they won't let outmoded intellectual property laws stand in their way".[102] The argument here is that the claim of the original author should always be the greater, and they should have the right to prevent their work from being remixed. However, by enabling artists to retain control and earn remuneration from their digital artworks, NFTs put an artist in a far stronger position to tolerate remixing should they choose, and as evidenced from the empirical research, in some cases remixing is positively encouraged (Chapter 7 §3.2).

Finally, creating a separate market for tokens that signify and prove ownership and authenticity of works, i.e. NFTs, diminishes the incentive of rights owners to invest in expensive and often futile enforcement efforts online, leading to greater access to works online and greater profits for the artists.[103]

So, in conclusion the adoption of a robust IPR policy in relation to NFTs will enable them to fulfil their role in helping to rebalance the digital copyright imbalance for digital artists.

4. Do NFTs Answer the Pleas for Digital Exhaustion?

Rules have developed in the digital environment that focus on licences rather than sales of digital goods, enabling companies to leverage greater control over users, not only over the pricing and availability of protected works, but also over the uses that users can make with their "purchases."[104] The current legal regime has been shaped by two decades worth of efforts to eliminate secondary markets online,[105] in order that rightsholders might retain control via licensing and prevent resale.[106] Many commentators have argued for a digital doctrine of

[101] L. Lessig, *Remix: Making Art and Commerce Thrive in the Hybrid Economy* (NY: Penguin, 2008) xviii.
[102] D. Tapscott & A.D. Williams, *Wikinomics: How Mass Collaboration Changes Everything* (NY: Portfolio, 2006) 52–53.
[103] L. Helman & O. Tur-Sinai (n 2) 4.
[104] J.A.T. Fairfield, 'Tokenised: The law of NFTs and Unique Digital Property' (2022) 97 Ind LJ 1261, 1266; A. Perzanowski & J. Schultz, *The End of Ownership* (MIR, 2016) 891.
[105] J.A.T. Fairfield (n 104) 1309.
[106] S. Reis, 'Toward a Digital Transfer Doctrine' (2014) 109(1) NUL Rev. Fall 173, 175.

exhaustion to address this lack of ownership and control of digital rights,[107] to rebalance the balance of power in the ownership of digital rights.

However, the situation with NFTs does need to be distinguished, as the current debate regarding a plea for digital ownership and exhaustion does not translate in its entirety to NFTs. This is because NFTs create a unique online environment. For example, the distribution and control of multiple copies of works, e.g., e-books, films, software and music via intermediaries is different to the sale of a unique, collectible and one-off or limited number piece of digital art created by an artist, sold directly for fair compensation as an NFT and with the artist's permission to a collector via an NFT platform. Arguably, with the adoption of streaming, users have adapted to the lack of digital ownership,[108] whereas for NFTs the secondary market is the entire point.[109]

However, arguments made in favour of digital exhaustion do support the argument of such a policy in relation to NFTs. A number of such arguments for the creation of a digital exhaustion are economic in nature and, as pointed out by the AG Szpunzar in *Tom Kabinet*,[110] it is important to be wary of economic rather than legal justifications for justifying a digital doctrine of exhaustion. Economic justifications and arguments are useful by way of context, and certainly cannot be ignored, but ultimately any justifications in this research for copyright law to adopt NFTs need to based in law rather than economic theory.

Scholars have identified access, preservation, privacy and transactional clarity as benefits for a policy of digital exhaustion.[111] In addition Perzanowski & Schultz also suggest two additional benefits: increased innovation and platform competition.[112]

In addition to providing legal certainty exhaustion in relation to NFTs would undoubtably have economic benefits. In terms of access, the continuing and legal existence of NFT platforms would enable digital artists to mint and sell NFTs, and for collectors to trade NFTs via secondary markets; activities crucial to the still developing market and NFT technology, and

[107] A. Perzanowski & J. Schultz, *Digital* (n 104); C. Sganga (n 1); S. Reis (n 106).
[108] Opinion of AG Szpunar in *Tom Kabinet,*C-263/18, EU:C:2019:697 95.
[109] J.A.T. Fairfield (n 104) 1309.
[110] AG Szpunar in *Tom Kabinet* (n 108) 95.
[111] S. Reis (n 106) footnote 102.
[112] A. Perzanowski & J. Schultz (n 104).

to further innovation and competition between NFT marketplaces. Regarding privacy, the pseudonymous nature of the blockchain and NFT platforms allows for collectors to transfer works to others without obtaining the consent of the copyright holder.[113] Transactional clarity is also crucial with NFTs. Digital exhaustion with NFTs would promote transactional clarity and market efficiency because it would reduce information and transaction costs.[114] As this research has shown these costs are currently still high in terms of complexity, inaccuracies and lack of consensus across the NFT platforms, creating an incomprehensible and navigationally challenging field for users. In addition licences confuse users and impose high information costs on transactions,[115] and users are forced to "parse the differences and new terms at an even higher cost" when platforms modify or update ToS.[116] This research highlights the frequency with which NFT platforms both change their business models and update their ToS, and digital exhaustion would provide much needed certainty, consistency and clarity.

So, whilst not a solution to the overall issue of digital exhaustion, NFTs certainly do have a role to play in nudging open the door to digital exhaustion.

5. Conclusion

The argument posed by this Chapter is that in the field of digital art, NFTs have the potential to boost the digital copyright incentive to create by reinstating the concepts of scarcity and authenticity online, whilst not entailing significant costs in terms of restricting user rights or narrowing the public domain, thereby benefiting both artists and society as whole.[117] NFTs are also aligned with labour and personality theories, and encourage the participation of diverse and disadvantaged groups of authors to take a more central role in the art scene.[118] Digital art forms a central part of a democratic discourse and robust copyright is necessary both for the creation and the dissemination, via CryptoArt, of that expression.

Equally, supported by robust IPR, NFTs have a role to play in rebalancing the digital copyright imbalance, and the potential, as a sub-class of digital goods traded online, to nudge to door open regarding a doctrine of digital exhaustion.

[113] S. Reis (n 106) 191.
[114] A. Perzanowski & J. Schultz (n 104) 896.
[115] S. Reis (n 106) 191.
[116] A. Perzanowski & J. Schultz (n 104) 906.
[117] L. Helman & O. Tur-Sinai (n 2) 12.
[118] ibid 30.

However, absent any policy or regulation the agenda is currently being set by the NFT platforms, where the current regulation of choice is not copyright law, but code.[119] As this research demonstrates, such "digital determinism" is leading to confusion and inconsistency.[120] Uncertainty surrounding the also weakens buyers' confidence, reduces prices and will eventually harm the NFT market.

IPR, and in this case copyright, is in a state of constant evolution and reconsideration.[121] For example, policy makers have extended copyright to new types of creations, either by fitting them into categories, e.g. photos, films or software or creating new categories, such as sound recordings and TV broadcasts.[122] Copyright, as discussed in Part IV of this thesis, also has the potential to be flexible and creative.[123] The argument here is that is possible for courts and policy makers to adopt a policy in relation to NFTs without regulation. This research does not argue that NFTs are to be considered a new category of copyright, as it is clear that digital art is currently protected by copyright, or that a doctrine of digital exhaustion applies to digital goods in their totality. What it recommends is that NFTs, as a sub-class of CryptoAssets, be treated as tangible, rather than intangible objects in the eyes of copyright law, in order that they may be functionally equivalent to their physical art counterparts, and to properly reflect in law what is happening in practice.

[119] P. Mezei & Others, 'The rise of NFTs and the role of Copyright Law – Part I' (*Kluwer*, 22 April 2021) https://copyrightblog.kluweriplaw.com/2021/04/14/the-rise-of-non-fungible-tokens-nfts-and-the-role-of-copyright-law-part-i/ .
[120] R.P. Merges (n 36) 240.
[121] G. Dutfield & U. Suthersanen (2008) (n 4) 4.
[122] ibid 14.
[123] P. Mezei, 'Hop on the Roller Coaster – New Hopes for Digital Exhaustion?' (2022) 71(11) GRUR International 1017. https://ssrn.com/abstract=4256645.

Part VI – Conclusion

In this part, the following final Chapter concludes with a discussion on findings, recommendations, limitations and further research.

Chapter 12: Conclusion – the Future

1. What Has This Research Found?

This thesis identifies from the literature, and from empirical research, three main copyright issues that arise in relation to CryptoArt NFTs. These are rights, infringement and platform liability. NFTs do not fit neatly within current copyright law and NFT platforms are struggling to adapt their business models to fit within the existing law.

The thesis began with three aims (Chapter 1 §9). Firstly, to undertake a case study analysis of six NFT platforms in order to gather empirical evidence to analyse how, in practice, the NFT platforms approach the three copyright issues highlighted. Secondly, to recommend how the current law can be interpreted in order to bridge the gap between the practice of the NFT platforms and the current copyright law. And finally, thirdly, to justify from a theoretical position why the law should in fact be interpreted to support the practice of the platforms and the NFT market.

1.1 Case Study Analysis

Regarding rights, empirical analysis highlights how the NFT platforms all give the impression that artists are selling and collectors are buying NFTs (Chapter 7 §2.1), and how NFTs are protected by copyright (Chapter 7 §2.2). Beyond this position the situation is confusing, with little guidance given to the user, and a lack of uniformity between the platforms. In relation to rights granted on the "sale" of an NFT, there is no consistency as to how the platforms permit such a sale, with little guidance or explanation, leading to at best consumer confusion, and at worst misleading practices. Across the platforms, any reference to a user not having the exclusive rights, or being granted a licence to the underlying artworks, are, where mentioned, well-hidden, and for the average user, fairly incomprehensible (Chapter 7 §2.3). Secondary

sales are encouraged (Chapter 7 §2.4), with financial incentives to resell via the originating platform (Chapter 5 §6), and two platforms prohibit "double minting" (Chapter 7 §2.5).

Turning to infringement, the platforms all assume that the minting of an unauthorised NFT is copyright infringement (Chapter 7 §3.1), and they all adopt, with varying degrees of success, transparency and legitimacy, processes to identify and deal with "copyminting" (Chapter 7 §3.2).

Finally, and perhaps unsurprisingly, given the uncertain legal nature of NFTs and CryptoArt, platform liability is the issue of most concern and consistency between the platforms. They all, without exception, go to great lengths to limit their liability to the fullest extent permitted by law (Chapter 7 §4).

In their defence, absent legal certainty platforms are dealing with a challenging situation. However, whilst they endeavour to give the impression of being trustworthy, supportive and safe communities where users can lawfully mint and trade NFTs, this is not backed up in the small print of the platform, or by the current law.

1.2 Bridging the Gap

The legal position of ownership of a CryptoToken, together with rights to the underlying artwork is not settled, and current law suggests how there is no doctrine of exhaustion when it comes to the exploitation of digital works online.[1] So, even if it is possible to transfer ownership of a CryptoToken, the same does not apply to the underlying artwork to which that CryptoToken is linked, which can only be exploited by way of licence. However, empirical evidence demonstrates how NFT platforms are ignoring this issue, in that they permit artists to mint and sell NFTs to collectors, who are then are under the impression that they "own" an NFT, and are able to freely dispose of their purchase via secondary market places.

This research demonstrates from a doctrinal point of view how it is possible to interpret the law to legalise the position taken by the platforms. By classifying CryptoAssets (the definition of which includes CryptoTokens) as tangible personal property, an NFT could then be classed

[1] *Capitol Records, LLC v. ReDigi Inc*., 934 F. Supp. 2d 640 (SDNY 2013) 910 F.3d 649 (2d Cir. 2018); Case C-263/18 *Tom Kabinet*, EU:C:2019:1111.

as a tangible article. Copyright protection includes the exclusive right to control the distribution of a work incorporated in a tangible article.[2] So, CryptoArt could be defined as a tangible article within which the protected work, i.e. the digital art is fixed, thereby permitting the exhaustion of the exclusive distribution right for that particular NFT. No interim reproduction occurs during the transfer of an NFT, and it is not possible for the creator or seller of an NFT to retain a copy of the NFT. An NFT as a tangible article, and as property, can be transferred to a collector, who is then free to dispose of that NFT as they wish, including via secondary markets. As with a physical painting, only the distribution right would be exhausted and not the reproduction right. However, a lawful owner is permitted to display that artwork. Therefore, the exploitation of the exclusive distribution right would legalise the "sale" of NFTs via the NFT platforms, and provide legal certainty to both secondary sales and royalties.

Equally, empirical analysis demonstrates how the platforms consider the minting of an unauthorised NFT to be infringement (Chapter 7 §3), whereas as outlined in Chapter 9, again the law is not settled. The doctrinal analysis in Chapter 9 focuses on the technically complex landscape of exclusive rights, and discusses which right might be infringed by the minting of an unauthorised NFT. Chapter 9 concludes by recommending the adoption of a more purpose led interpretation of the law. The categorisation of an NFT as a tangible CryptoToken would allow for the infringement of the exclusive distribution right, and provide legal certainty in what is a complex and highly fragmented corpus of economic rights.[3]

Such a position would far better reflect the functional equivalence of CryptoArt to a physical IRL painting, and the practice of the platforms. A purpose led, normative and technologically neutral application of the distribution right would reduce the complexity of the current fragmented rights based approach which is based on the technical uses of copies of works, thereby permitting rightsholders to better protect and enforce their rights.

Finally, turning to platform liability, reliance on the safe harbour rules by the platforms enables them to argue that they are not responsible for content that they make available to the public. However, Chapter 10 analyses how it might not always be possible for them to rely on the protection of the safe harbour rules, but again, the law is not settled. Adopting the conclusion

[2] InfoSoc Recital 28
[3] B. Faturoti, 'The CJEU and the educational exception in *Renckhoff*' in D.J. Gervais (ed), *The Future of IP* (EE 2021).

of this thesis that CryptoAssets are capable of classification as tangible goods, and therefore of exploitation by distribution would provide legal certainty and clarify what is a very complex legal landscape. Equally, the classification of NFTs as goods means the application of consumer protection warranties, so further protecting the rights of users.

1.3 Justifying the Direction of Travel

Finally, Chapter 11 analyses how the continued protection and support of NFTs can be justified from a theoretical IPR position. NFTs have the potential to boost the digital copyright incentive and nudge the door open on a doctrine of digital exhaustion, thereby having a significant role to play in rebalancing the digital copyright imbalance.

2. Policy Recommendation

This research recommends that CryptoAssets be classified as not only personal property (a position which seems settled in common law jurisdictions) but as tangible personal property. Such a categorisation would enable the lawful transfer and protection of CryptoTokens which are associated with a copyright protected work. The proposed (Digital Assets etc) Bill [HL] states how "A thing is not prevented from being the object of personal property rights merely because it is neither (a) a thing in possession, nor (b) a thing in action." This position suggests that whilst capable of being personal property NFTs (as Digital Assets) are neither tangible or intangible. The problem with copyright is that protected works are exploited either as incorporated into a tangible article, or as intangible digital file. In order to support the development of NFTs, the most pragmatic and timely recommendation would be a policy decision that supports the position that CryptoAssets, i.e. CryptoTokens, that are linked to or otherwise associated with copyright protected content be classified as tangible articles capable of distribution.

As analysed in Part IV of this thesis, within the EU, the CJEU has demonstrated an ability to take a policy based and/or creative approach to Copyright.[4] The Courts in the UK have been seen to relatively pragmatic when it comes to issues of developing technology and the enforcement of rights.[5] The US, also with a common law jurisdiction has the ability to adopt

[4] Case C-128/11 *UsedSoft GmbH v Oracle International Corp,* ECLI:EU:C:2012:407; Case C-419/13 *Art & Allposters International*, EU:C:2015:27; Case C-263/18 *Tom Kabinet*, EU:C:2019:1111.
[5] *Lavinia Deborah Osbourne v Persons Unknown, Ozone* [2022] EWHC 1021 (Comm).

a more flexible approach when interpreting the current law, and as with the UK has been seen to be robust in helping rightsholders to enforce their rights.

Within the US, whilst stakeholders have raised concerns about copyright infringement in relation to NFTs, most believe that current IP laws are adequate to deal with infringement,[6] although the circumstances in which a platform itself would be liable are not settled.[7] The USPTO agrees with the concern expressed by stakeholders that NFT-specific legislation would be premature at this time, and could impede the development of new NFT applications, given the evolving nature of the technology.[8]

Whilst this thesis recommends how the current law may be interpreted without legislative change to accommodate the current technology, until we have case law or a change of policy the law remains unsettled. However, a statement of policy within the EU and/or the UK that NFTs as tangible goods are capable of exploitation by distribution would be welcome given the time that may pass before we obtain settled case law. By adopting such a policy the UK Government could steal a lead on the US, particularly if it wishes to encourage the development of NFTs and the associated technology within the UK, a market which is currently dominated by NFT platforms in the US. It would provide clarity, and if and when developments do occur in other jurisdictions, i.e. the US, a further degree of harmonisation. The technology is still developing, and changes could be rapid. The law needs to remain nimble, adaptable and able to encourage the further development of the NFT landscape.

It is not entirely clear why the NFT platform *KnownOrigin* closed its doors in December 2024, but commentary suggests concerns over "shifts" in the NFT market which raised concerns regarding longevity and safety over digital assets.[9] Concerns also supposedly focused on the need for secure storage solutions, i.e. on-chain marketplaces and a conversation around NFT ownership and security.

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[6] USPTO & USCO *NFTs and IP* A Report to Congress (March 2024) https://www.uspto.gov/sites/default/files/documents/Joint-USPTO-USCO-Report-on-NFTs-and-Intellectual-Property.pdf 42.
[7] ibid 22.
[8] ibid 43.
[9] O. Skelton, 'KnownOrigin Shuts Down' (*NFT News Today*, 2024) https://nftnewstoday.com/2024/07/22/knownorigin-shuts-down-whats-next-for-nft-collectors/

So, technological development is still required for NFTs to achieve their full potential and value. Historically, the law has developed reactively to technological change. However, adopting the recommendation of this thesis would allow policy makers instead to take a proactive, future proof and dynamic approach to what is still a developing technological landscape.

3. Limitations and Further Research

Given the global nature of the internet, blockchain and NFTs an international approach will ultimately be required. For example, the principle of exhaustion is regional, which raises issues regarding the need for a global doctrine of digital exhaustion in relation to NFTs, the sales of which are global. Any regime for digital exhaustion would therefore need to be harmonised, at the bare minimum at a policy level, on a global basis in order to reflect the global nature of NFTs.[10] Additionally, civil law jurisdictions, with more rigid property law systems may find it difficult to accommodate CryptoAssets as tangible property.[11]

It is the assertion of this research that NFTs, as CryptoAssets and a subclass of Digital Assets, are not just unique in their design, but also in their application and how they sit within the law. They are not the solution to digital exhaustion and issues surrounding digital ownership, as the markets, business models, technology and stakeholders are too different. It is hard to compare the streaming of the same piece of music, as a digital file, by hundreds of thousands of listeners on Spotify, to the sale of one unique piece of CryptoArt, so as personal property, by a creator to a collector on the blockchain via a NFT platform. That is not to say that principles used for NFTs might not in future be adapted to suit the wider markets, and certainly need to be designed to be as technologically neutral as possible, given the technological leaps that are occurring at speed, and on a regular basis. Further research is required to understand the implications of this direction of travel in other areas of law, and to digital assets more broadly. The space has a long way to go, and whether the technology will be adapted in the broader and more traditional digital asset ownership environment will remain to be seen, but it cannot be fully discounted.

[10] P.S. Morris, 'Beyond Trade: Global Digital Exhaustion in International Economic Regulation' (2014) 31 Campbell Law.Rev. 107 https://ssrn.com/abstract=2410340.
[11] P. Caglayan Aksoy, 'The applicability of property law rules for CryptoAssets' (2023) 15(1) L.I.T. 185, 186. https://doi.org/10.1080/17579961.2023.2184140.

4. Conclusion

This thesis recommends that CryptoArt NFTs (as CryptoTokens and CryptoAssets) be classified as tangible personal property. CryptoArt is closer in analogy to a physical painting than to a digital file, and is capable of distribution. Distribution is an exclusive right which relates to tangible copies of works that can be distributed by sale or transfer of ownership and with consent of the copyright owner. The doctrine of exhaustion applies to distribution, enabling the lawful disposal and sale of goods in secondary markets.

This research demonstrates how it is possible to interpret current copyright law to support this position. However, it also recommends how the development of the NFT ecosystem would be better supported by a policy based approach. Such an approach would provide much needed legal certainty to a fast moving and still developing area, enabling digital artists to better exploit and protect their rights, and the technology to flourish.

This research focuses on the protection on digital art NFTs, i.e., CryptoArt. However, the recognition of CryptoArt, so the combination of a digital artwork associated with a CryptoToken, as a tangible article within copyright law has the potential to view differently how we perceive value, authenticity and the very definition of ownership of digital creative works protected by copyright.[12]

So, this thesis ends as it began. NFTs, led by CryptoArt, have the potential to redefine in the long term the very essence of how value and ownership are protected in the digital age.

[12] M. Dalal, 'Are NFTs The Future of Digital Art and Collectibles' (*YourStory*, 22 October 2023) https://yourstory.com/2023/09/digital-innovation-nfts-reshaping-ownership.

Appendix 1

Protocol for Collecting Case Study Data

Step 1

The first step was to thoroughly review the platform. All of the information available and visible on the platform was considered for references to copyright, infringement and platform liability. Content included for example: website content, frequently asked questions (FAQ's), help sections, blogs, community guidelines, current policies and terms of service (ToS).

Step 2

This was followed by a thorough literature review of the platform itself, carried out by using the platform name as a search term within the UEA online library. All references dated for the previous year were considered and researched.

Step 3

An online search followed. This was done firstly by using the platform name as a search term for Google Scholar, before conducting a more thorough search via Google using the following search terms

1. [platform name]
2. [platform name] nft
3. [platform name] copyright
4. [platform name] infringement
5. [platform name] verification
6. [platform name] platform liability
7.

Step 4

X and Discord were both consulted. However, this was done from a relatively high level, for example following up links and comments from Steps 1-3 rather than conducting thorough systematic searches. Both X and Discord refer far more to users' experience of the sites rather than how the platforms themselves are applying the law. So, whilst useful in terms of context and fascinating from a social reality point of view, the decision was taken to remain focused on the platforms rather than user experience.

Documents produced

The above steps resulted in a Case Study document. This, together with other memos and notes created regarding the platform, the platform's ToS and other relevant content from the platform itself was then uploaded to NVivo for coding.

Appendix 2

Bibliography for Case Study Data Uploaded to NVivo

[Analysis of the case study data using NVivo took place in the Autumn of 2023, and all data was current at the cut-off date for analysis of 27 September 2023. However, the content was last accessed and checked on 29 December 2024. If content was unavailable at that date, it is noted below, but copies of all of the documents uploaded to NVivo for analysis remain available from the researcher.]

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A. Fauvre-Willis, 'Authenticity on OpenSea: Updates to Verification and Copymint Prevention' (*OpenSea Blog*, 11 May 2022) https://opensea.io/blog/articles/improving-authenticity-on-opensea-updates-to-verification-and-copymint-prevention **[OS2]**.

D. Finzer, 'Our Efforts to Curb Fraud and Plagiarism – and What's Next' (*OpenSea Blog*, 8 June 2022) https://opensea.io/blog/articles/our-efforts-to-curb-fraud-and-plagiarism-and-whats-next **[OS3]**.

S. Kelley, *OpenSea* (Memo) (15 July 2022) **[OS4]**.

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S. Kelley, *Note on OpenSea Coding* (Memo) (12 January 2023) **[OS9]**.

S. Kelley, *Note on OpenSea's ToS* (Last Updated, 12 June 2023) **[OS10]**.

S. Kelley, *Notes on OpenSea Coding* (Memo) (18 June 2023) **[OS11]**.

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S. Kelley, *Rarible Coding* (Memo) 12 Jan 2023 **[R5]**.

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4. ***SuperRare***

S. Kelley, *SuperRare* (Memo) (18 July 2022) **[SR1]**.

S. Lekka Angelopoulou, 'We see it as a massive digitisation of art collecting' – interview with NFT platform SuperRare (*Designboom.com*, 6 November 2022) https://www.designboom.com/art/digitization-art-collecting-interview-nft-superrare-10-06-2022/ **[SR2]**.

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