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2024 NFT PFP Project IP License Report

UNIVERSITY OF SAN FRANCISCO | Center for Law, Tech, and Social Good

EXECUTIVE SUMMARY

Non-fungible Tokens (NFTs) are here to stay. Despite the hyper volatility[i], the size of the NFT market is approximately $70B.[ii]. The largest NFT marketplace has 600,000 registered users and 80 million NFTs.[iii] These digital assets have increasingly become more commonly used in art, gaming, finance, and other areas—"[c]ompare this to sales of modern art, which last year sat at $3.1 billion."[iv]

This report discusses the complexities and challenges associated with intellectual property (IP) licensing for NFTs that are used in Picture for Profile (PFP) Projects. Since 2017, PFP Projects have used a variety of IP licenses to exert control over the art associated with the NFT, while still empowering the NFT holders. The premise of this research is that the lack of an industry standard slows innovation and harms consumers.

We examined a sample of 100 PFP Projects, selected from tens of millions of NFTs and thousands of PFP Projects. This sample provided sufficient data to extract trends, insights, and questions for further study. Based on this report, there are two recommendations. One, NFT marketplaces should include information about the applicable IP license used by the project. This approach is analogous to privacy policy information provided to users in mobile application stores.[v] And two, conduct a comprehensive study for as many PFP Projects as possible. This would allow additional legal analysis of trends, challenges, and inform future recommendations. Providing policymakers with concrete use cases, rather than hypotheticals, would result in more informed public policy regarding blockchain technology.

We conclude that improved industry standards can address many of the issues related to transparency, among others. But given the nascent stage of PFP Projects, technological changes, and wide experimentation with different license models, further study is both necessary and possible to keep pace with this rapidly developing space. Grant support to expand this research would enable the use of technical tools to collect more data, in real-time, and analyze it with more detail. Numerous entities, such as OpenSea, have accessible APIs that can be used for future analysis.[vi]

INTRODUCTION

Non-fungible tokens (NFT) used for digital art comprise two-parts: the image (art) and the token associated with that art.[vii] Each component is crucial. The art gives the creator of the NFT property rights over their image under copyright law, while the token authenticates the non-fungible aspect of the art piece, i.e., that this piece of art is associated with only this token.

Creators of an NFT use the association between an image (art) and a token in a variety of ways. NFTs are particularly useful to those working in creative industries. These industries–such as art, music, and film–rely on intellectual property laws to protect their expressive works for economic value. However, people working in the creative industries often struggle because digitization makes copying easy and thus theft is rampant. NFTs—through the tokens—provide a solution as an immutable method to authenticate a piece of digital art.

The most famous example of an NFT as a digital fine art is the artist Beeple's *The First 5000 Days*.[viii] Beeple sold *The First 5000 Days* on March 21, 2021 for $69M at a Christie's auction.[ix] Other examples include companies embracing NFTs to launch digital versions of their goods[x] or combat knockoffs.[xi] Another innovative use of these tokens are Picture for Profile NFT Projects.

The power of NFTs to authenticate individual digital art spawned PFP Projects. NFTs used by PFP Projects and Beeple's digital fine art share the same origins. Both types of NFTs—PFP Projects and digital fine art—have unique images associated with a wallet that is released in limited numbers or as a collection. Creators of either a PFP Project or digital fine art may allow or restrict those who acquire the NFT (an NFT wallet holder) to sell the art via a public marketplace. In addition, the creator of a PFP Project or digital fine art can also provide special benefits to the NFT wallet holder.

At this point, PFP Projects and digital fine art NFTs begin to diverge. The easiest way to think of an NFT is akin to a key. The image identifies the keyhole, while the control of the token provides the unique grooves that enable the token holder to open a door. Digital fine art authenticates a piece of art one owns, displays, and can sell or give away. By contrast, the NFTs associated with PFP Projects provide more options: Once the token holder opens the door, token holders of PFP Projects often receive special benefits. These benefits may include the ability to sell or transfer the token without asking permission from the creator; accessing special events (online or offline); receiving special offers as a token holder; or, in some instances, using the image associated with their token to sell merchandise and keeping the money.

Not all NFTs are the same

PFP Projects also differ from digital fine art NFTs in that they follow a unique business model: PFP creators sell NFTs to build a lasting, engaged community rather than targeting one-time consumers. These communities actively participate in buying, selling,

and even developing derivative businesses based on the project's artwork. Some communities engage in governance, influencing the project's direction.

For example, a PFP Project may release a collection of 10,000 images, each featuring a unique combination of traits such as eye color, hairstyle, background, or clothing. The large variety of traits ensures the uniqueness—or non-fungibility—of each image. This model fosters a community of token holders invested in the project's success. PFP Project founders often allow NFT holders to engage in a range of activities, including buying, selling, lending, borrowing, staking, and creating derivative works based on the NFTs they control.

Thus, PFP Projects can be viewed as a new form of media company native to blockchain.[xii] Recognizing the potential of these new business model, consumers and investors have poured money into PFP Projects. The first PFP Project, Cryptopunks, launched in 2017, remains the most valuable to date, with a market capitalization of approximately $1 billion. Since then, new entities like Yuga Labs—the creator of the Bored Ape Yacht Club (BAYC)—have emerged, raising $450 million in venture capital and achieving a valuation of $4 billion.[xiii] More recent projects like Doodles describe themselves as "next-generation entertainment companies" focused on immersive storytelling and the production of live and digital experiences, original content, and lifestyle products.[xiv]

Having a community of thousands of individuals willing to spend money to be a part of a PFP Project has broad consequences. Companies like Yuga Labs have raised investor funding based on that participation to expand the business, like any startup. Business expansion leverages the intellectual property of the images and extends beyond digital assets or online activities to include physical products, such as toys.[xv]

For legal scholars, NFTs prompt important discussions about intellectual property licenses versus contract agreements.[xvi] PFP Projects have introduced new IP licensing agreements to accommodate their business models. However, challenges remain in applying IP licenses effectively to these projects.

The challenge with IP Licenses for PFP Projects

PFP Project creators rely on copyright law to manage relationships between themselves and NFT holders. IP licenses are used to exert control over the NFT's use while still permitting holders to engage with the NFT in various contexts. This approach, however, presents several challenges. These include a lack of transparency regarding the applicable IP licenses, the absence of an industry standard, and uncertainties surrounding the terms of these licenses.

For instance, NFT holders often face confusion over which license applies upon purchasing a PFP NFT or whether that license might change. For example, the creators

of the Moonbirds PFP Project adopted a Creative Commons License[xvii] four months after the initial sale of the NFTs, leaving holders uncertain about the rights they possessed.[xviii]

This lack of transparency is compounded by the absence of industry standards. No single IP license is universally used. Nor is there a standardized method for making licensing information easily accessible on NFT marketplaces. While many PFP Projects provide terms and conditions on their websites, they often omit specific details about IP licenses or the project's jurisdiction. This lack of clarity can lead to serious consequences for copyright infringement and failure to comply with local regulations.

One significant area of concern is consumer protection. The lack of transparency around IP licenses, combined with the absence of standardized industry practices, leaves NFT holders uncertain about their rights. For instance, consumers might be unaware of which IP license applies when they purchase an NFT, or, as observed with Moonbirds, whether the terms of the IP license might change unexpectedly, where the project retroactively applied a new license. This lack of clarity can result in consumers inadvertently infringing copyright or violating local regulations, exposing them to legal risks. Furthermore, NFT marketplaces do not consistently provide accessible information regarding IP licenses, which exacerbates the uncertainty for consumers, highlighting a need for clearer standards and regulations to protect consumer rights in this evolving market.

Even well-intentioned PFP Project creators struggle to craft IP licenses that align with both the community's needs and their project's business model. Current IP laws and licenses were not designed for digital assets built on blockchain technology, so even the most innovative frameworks fall short. Open-source licenses are tailored for software, and Creative Commons Licenses aim to "*share knowledge and culture*."[xix] Meanwhile, efforts to develop industry standards for PFP Projects remain nascent and fragmented.

Project Goal

The objective of this report is to bridge legal discourse with real-time data on how PFP Projects utilize IP licenses. In order to keep up with the rapidly evolving NFT space, a clearer understanding of current practices and future needs is necessary. This study focuses on a specific, economically significant subset of digital assets: PFP Projects. At present, creators of these projects rely on IP licenses to manage their growing communities, raising several critical questions.

While discussions about the legal complexities surrounding NFTs are not new, the volatility of NFT markets, unclear legal frameworks, inconsistent use of copyright registration,[xx] and opaque marketplace practices[xxi] have led legal scholars to question how the NFT space can be more effectively managed.[xxii] This project zeroes in on one key problem: the absence of a standardized IP license for PFP Projects.

The premise of this research is that the lack of an industry standard slows innovation and harms consumers. IP licenses are critical for PFP Projects to operate; for better or worse, PFP Projects often rely on an IP license to govern the financial mechanics of the

project and the participation of token holders. It is not surprising, therefore, that there are industry efforts to create IP licenses native to PFP Projects, such as the NFT2.0 license and Can't Be Evil (CBE)[xxiii] license. Nonetheless, the use of IP licenses by PFP Projects remains fragmented, highlighting the urgent need for standardized IP licenses.

Establishing an industry standard for IP licenses would have lasting benefits. For industry, it would reduce the costs of launching PFP Projects, thereby increasing competition among marketplaces and spurring innovation. For consumers, a standardized IP license would enhance transparency, foster competition (thus reducing prices), and lower the risk of exploitation by malicious actors.

This research serves as a starting point. By examining a sample of PFP Projects, it underscores the tangible benefits of comprehensive research, including support for consumers, the industry, policymakers, and academics. Additional funding would enable further legal scholarship, allowing researchers to keep pace with industry developments. With access to APIs and publicly available data, scholars can analyze this space more thoroughly than ever before. Providing policymakers with concrete use cases, rather than hypotheticals, would result in more informed public policy regarding blockchain technology.

Finally, this research aligns with the mission of the Center for Law, Technology, and Social Good. Developing industry standards has both economic and social benefits. Clear IP licensing standards would facilitate greater participation in PFP Projects by entities in social impact, education, and government sectors. Additionally, the data gathered will support the Center's Government Training Program by providing policymakers with real-world use cases to inform more effective policy.

Research Goal

The first step is to examine how PFP Projects utilize IP licenses. PFP Projects are popular across various industries because they do not require technical expertise, which makes them one of the most accessible ways to launch a Web3 company. As a result, the spectrum of PFP Projects founders ranges from sophisticated actors financed by venture capital[xxiv] to artists working on their own projects.[xxv] A deeper understanding of their use of IP licenses can guide scholars in identifying further research areas, provide policymakers with data for informed regulation, and help practitioners establish industry best practices.

Although a substantial amount of data was collected, this report focuses on three key categories: (1) the type of IP license used by a PFP Project ("Type of License"), (2) the terms specified in the IP license ("License Terms"), and (3) the project's country of origin ("Country of Origin"). The definitions for "Type of License" and "License Terms" are detailed in the methodology section.

Opportunities for additional study based on the data collected—such as any relationships between royalty fees and license types or IP laws and country of origins—are not addressed in this report but may be explored in future research.

Research Questions

This investigation is an effort to answer the following questions:

1. What are the most commonly used IP licenses by PFP Projects?
2. What are the most commonly used IP licenses by PFP Projects in the United States?
3. What are the most common *terms* in IP licenses by PFP Projects?
4. What are the most common *terms* in IP licenses by PFP Projects in the United States?
5. What trends over time can be identified?

Answers

1. **What are the most commonly used IP licenses by PFP Projects?**
   Split between the NFT2.0 license and No license.

2. **What are the most commonly used IP licenses by PFP Projects in the United States?**
   75% of PFP Projects based in the US used NFT2.0 license; the US based PFP Projects using NFT2.0 licenses makes up 66% of all NFT2.0 licenses.

3. **What are the most common *terms* in IP licenses by PFP Projects?**
   No ownership information—which defaults to copyright law in the PFP Projects of origin made up 40%; followed by Limited Transfer of Image Rights 36%.

4. **What are the most common *terms* in IP licenses by PFP Projects in the United States?**
   64% of the licenses used by PFP Projects in the United States imposed some type of Limit Transfer of Image Rights.

5. **What trends over time can be identified?**
   Increase in PFP Projects having No License (default to local jurisdiction).

Research Deliverables

- Report
- Database

Legal Framework: Intellectual Property (IP) Licenses

An NFT links an image (art) with a token, roots this discussion in copyright law.[xxvi] Copyright grants an author the right to control the reproduction of their intellectual creation, defined as "original works of authorship fixed in any tangible medium of expression."[xxvii] Copyright protection applies automatically once a creator fixes a work; no application is necessary.[xxviii] However, the creator must take explicit steps if they wish to modify or transfer these rights.[xxix]

Creators control their work while permitting others to use it through intellectual property (IP) licensing. An IP license grants permission for others to use the creator's intellectual property. In the context of NFTs, the IP license typically applies to the artwork or image associated with the token.

The foundation of IP licenses for PFP Projects derives from the open-source software (OSS) movement, which pioneered the use of scalable IP licenses.[xxx] These licenses allow creators to define usage rights without requiring negotiation of terms individually with each NFT holder. These rights can include personal or commercial use. For example, a PFP Project might produce 1,000 pieces of art as NFTs and sell them under an IP license that grants holders certain rights (e.g., displaying the artwork in their home) while restricting others (e.g., prohibiting display in a gallery).

PFP Project License Types

Copyright holders have considerable flexibility in establishing IP licenses. For this study, four types of IP licenses were identified: NFT2.0 License, Custom License, No License, and Blank (where it was not possible to determine a license). The discussion focuses on the NFT2.0 License, which is designed to support blockchain technologies and clarify a user's rights as the holder of a non-fungible token.[xxxi]

The NFT2.0 License is significant for three reasons. First, it was specifically created for PFP Projects, addressing needs that existing open-source and Creative Commons licenses do not. Second, despite its relatively recent introduction, the NFT2.0 License constitutes nearly half of all licenses in this study, indicating that it is perceived as a practical solution within the industry. Third, most PFP Projects in the dataset are based in the United States, where the NFT2.0 License is the most widely used. Thus, examining this license provides a baseline for understanding how PFP Projects utilize IP licenses and define their terms.
In contrast, the other license types offer less insight. Projects classified under "No License" default to their respective country's copyright laws. In the United States, for example, if specific rights are not granted to NFT holders, the creator retains all rights,

and any use of the image outside the scope of Fair Use may constitute copyright infringement.[xxxii] Given the variation in copyright laws across different countries, even among Berne Convention signatories,[xxxiii] it is difficult to derive meaningful insights outside of the scope of the NFT 2.0 License (or Creative Commons License).

While the NFT2.0 License is prominent, it is not the only license created for PFP NFT projects. In 2022, a16z launched the Can't Be Evil (CBE) license.[xxxiv] This report, however, does not focus on the CBE license because the data collected does not show wide adoption by PFP Projects.

Finally, PFP projects that use Custom Licenses are often varied and unique. This made meaningful insights difficult to extract. Some of the PFP Projects using Custom License appear to be derived from the Creative Commons License.[xxxv] The NFT2.0 license and Creative Commons License are juxtaposed below to illustrate the unique business model of the PFP Project.

NFT2.0	**Custom**	**No License**	**Blank**
IP license created for PFP NFT Projects.	Custom licenses created by a project. The license is often, but not always, based on Creative Commons License.	No license was found. Therefore, default copyright laws apply.	No information at all was found for the project. But there might be a license. Assume default copyright laws apply.

NFT 2.0 License

The NFT2.0 License, released in November 2018, was designed to address ownership questions within the crypto art community.[xxxvi] The license grants NFT owners the right to use the art for their personal, non-commercial use, such as printing and displaying the artwork in their personal spaces.[xxxvii] The license allows NFT owners to purchase and sell the NFT on marketplaces and third-party websites or apps, allowing the art's inclusion, involvement, or participation as long as the ownership is cryptographically verified.[xxxviii] Commercial use of the NFT art up to $100,000 in gross revenues is also allowed.[xxxix] Finally, NFT owners can take their NFT to any wallet, game, ecosystem, or marketplace that supports cryptographic verification of token ownership.[xl]

While the NFT2.0 License grants substantial rights, it also places restrictions to protect artists and creators.[xli] For instance, the license prohibits modifications to the NFT artwork, as alterations would compromise the NFT's artistic uniqueness. The license also forbids the use of NFT art in association with hatred, violence, or other inappropriate behavior.[xlii] Owners cannot use the artwork to market or sell third-party products, trademark the art, or otherwise claim its corresponding IP rights.[xliii] Moreover, any third party using the NFTs must cryptographically verify that the user is the legitimate owner.[xliv]

Custom license (Creative Commons)

The Creative Commons License (CC0), created by the Creative Commons Foundation, allows creators to relinquish their copyright and release the artwork into the public domain.[xlv] Under CC0, there is no single rights holder;[xlvi] the work belongs to the public. This means that anyone can use the NFT art freely, as the creator has waived all copyright claims. The CC0 License, however, applies only to copyright-protected expressions; other IP rights, such as personality rights, trademark rights, and privacy rights, may still apply unless explicitly waived. Therefore, when an NFT piece of art is purchased with CC0, it remains in the public domain and may be freely shared and modified by anyone. No one exclusively owns the right to copy and alter the work for commercial or personal purposes.

	NFT License 2.0	**Creative Commons License**
Purpose of Creation	To clarify questions on ownership in the crypto art community	To relinquish copyright and release the art into the public domain
Ownership of the Art	Attached to the NFT token and transferred to the purchaser	Public domain
Rights of the NFT Owner	Digital portability, personal use, and commercial use	Sole ownership to the NFT token and other IP rights, unless explicitly waived
Limitations	Modification of the art; use in connection with hatred, violence, or other inappropriate behavior; marketing or selling of third-party products; and trademark registration of the art	Exclusive copying and altering of the art for personal or commercial use
Significance	Allows the NFT owner to be creative with their collections while maintaining the artistic integrity of the project	Allows free sharing, non-exclusive use, and other social benefits

License Terms

In addition to identifying the Type of License, researchers categorized four License Terms to describe the rights transferred from the licensor (the PFP Project creator) to the licensee (the NFT holder).

Several insights emerged from the information collected. For instance, creators may use the same type of license (e.g., NFT2.0 license) but modify the license so that rights (subcategory) are not transferred the same way. Imagine two creators (Creator A and Creator B). Each Creator launches their own PFP Project. Both creators decide to use

an NFT2.0 license. Creator A, however, modifies the NFT2.0 license to transfer all image rights; while Creator B modifies the NFT2.0 license to limit the transfer of image rights.

Rights transferred under these licenses have also evolved. Initially, creators using the NFT2.0 license were more inclined to fully transfer image rights. More recently, however, creators have increasingly restricted the transfer of these rights, even while continuing to use the NFT2.0 license.

Definitions of License Terms

Full Transfer of Image rights	**Limited Transfer of Image rights**	**Full transfer but no transfer of moral rights**	**No transfer of image rights**	**No ownership information**
The creator permanently transfers all of their exclusive rights to the image to the token holder. This includes the right to reproduce, distribute, display, and create derivative works from the image. As the new copyright owner, the token holder can exercise these rights without needing permission from the original creator.	Limited transfer of image rights refers to the partial or conditional transfer of certain exclusive rights from the creator to the token holder. The token holder may use the image in specific ways or under certain conditions, or for particular purposes. The creator retains the remaining rights not	The creator transfers all economic rights to an image (such as reproduction, distribution, and creation of derivative works) to the token holder, making the token holder the new copyright owner. But the creator retains moral rights, which typically include the right to attribution and the right to integrity (protecting the work	The creator or copyright holder retains all exclusive rights to the image. These rights include the ability to reproduce, distribute, display, and create derivative works from the image. The creator can enforce these rights against	No information regarding the transfer or withholding of any rights in the image by the creator were found.

	transferred.	from derogatory treatment). Moral rights are personal and cannot be transferred.	unauthorized use. Any use of the image by a token holder requires explicit permission.	

METHODOLOGY

This analysis mapped out the information collected on OpenSea and the metadata associated with NFTs, such as creator information, ownership rights, and licensing details.

Research Methodology

This project employed a mix of qualitative and quantitative research methods. We collected non-numerical data such as Type of License, License Terms, and Country of Origin. Researchers identified, to the best of their ability, the license type used by each PFP Project, the relevant license terms, and the project's country of origin. This qualitative data was then coded for quantitative analysis; for example, projects using the NFT2.0 license were aggregated for comparison. While other quantifiable data, such as royalty fees, were identified as well, they fell outside the scope of this analysis. The long-term goal is to develop a comprehensive dataset for further qualitative and quantitative analysis.

Project Criteria and Timeframe

Data was collected between the timeframe of March 11, 2024 and April 7, 2024. The goal was to collect data as quickly as possible because PFP Projects have substantial price volatility. By collecting the data as quickly as possible, the research sought to have the most accurate and consistent snapshot of the PFP Project marketplace at that moment in time.

Data was collected from OpenSea,[xlvii] which accounts for "50% of all NFT trading volume,"[xlviii] making it the dominant platform in the NFT ecosystem.[xlix] The focus was on PFP Projects, identified using OpenSea's filtering tools: the 'Stats' tab was selected and filtered by the 'PFP' category, with NFTs sorted by floor price from high to low.

Researchers selected the top 100 projects by floor price,[I] and consider this sample size sufficient to generate meaningful insights into IP license use. Sorting by floor price served multiple purposes:

1. Analyzing the tens of millions of NFTs and thousands of PFP Projects was beyond the project's scope.
2. Higher floor-price projects were more likely to be legitimate PFP Projects rather than scams.
3. Projects with higher floor prices were presumed to have greater access to capital and legal counsel for determining the best IP license.
4. A larger number of token holders in high floor-price projects increased the likelihood that some holders understood or monitored the IP license.
5. The most influential PFP Projects often set industry standards, affecting practices among smaller projects. For instance, the founders of Cryptopunks, the first PFP Project, also created the NFT2.0 License.[Ii]

Attributes Collected

Researchers collected specific attributes from each PFP NFT project, including Project Name, URL, Number of PFPs, Date Recorded, Number of Traits, Value as of Date, External License Link, License Effective Date, License Type, License Ownership Transfer, Country of Origin, Tags, Blockchain Chain, Date Created, Creator Earnings, and Number of Unique Owners. If the license information was not available on the project's website, a Google search was conducted using the terms "[NFT project name] license" and "[NFT project name term(s) of use]."

Challenges

During the course of data collection and analysis, five challenges emerged while conducting research. The challenges included the following:

1. Fragmented Language and Clear Definitions
    - NFT project descriptions and licensing terms used a mix of industry-specific jargon or terminology unique to the project, making it challenging to interpret their meaning uniformly.
    - Language barriers were encountered from project descriptions, licensing terms, or community discussions, hindering accurate analysis and comparison across projects.
    - Various names are used for "license." The most common terms used are "terms of use" and "IP license."
    - No standard language and format for these NFT licenses.

2. Sparse Crypto-specific Legislation
    - Legal frameworks governing NFTs vary significantly between jurisdictions, leading to uncertainty regarding issues such as copyright protection, taxation, and enforceability of contracts.

3. Ambiguity and Rapid Changes
    - Rapid developments and updates within the NFT ecosystem may render collected data quickly outdated, requiring frequent updates and adjustments.

    - Sudden changes in licensing agreements, or platform policies could lead to uncertainty of the validity of previously collected data and require reassessment.

4. Navigating Varying Data Formats
    - Different NFT platforms and project websites present data in varying formats, making it challenging to compile and standardize information for comparative analysis. For example, some websites are simpler and more straightforward, while others are heavy on graphics and artwork. Some websites are more developed, while others would lead you to other sites in order to access more information.

    - Inconsistent metadata formats or incomplete project descriptions required additional manual efforts to organize data.

5. Inaccessible Information and Paywalled Research
    - The OpenSea platform did not have all the desired data readily available. For instance, the country of origin and the license details of NFT projects were not on the pages of the NFT projects in OpenSea. Thus, to collect this information, the researchers visited their respective websites and social media accounts, which were linked on their OpenSea pages.

    - In most cases, the country of origin and license details were not available or readily accessible to the researchers. Google searches were conducted to determine where a project originated and whether its license is available online.

    - Essential information such as detailed licensing terms was only accessible by subscribing to the platform or creating a wallet, which limited the access to necessary data.

Excluded Data

During the research process, certain types of data were excluded from the analysis based on their relevance, accessibility, and suitability for the research objectives. The excluded data primarily comprised:

1. Outside the Sampling Date
    - Data from NFT marketplaces or platforms not included in the top 100 ranking on OpenSea as of March 12, 2024, were excluded to maintain consistency and focus on the selected projects.

2. Other NFT Platforms
    - Other platforms, such as Binance, Coinbase, and Magic Eden, were not included in this study to avoid redundancy of data because much of the information available in the other platforms was also present in OpenSea.

3. Inaccessible Data:
    - Information behind paywalls or restricted access barriers, such as exclusive platform features requiring membership or purchase, was excluded due to limited accessibility.
    - Data sources or datasets lacking proper documentation, credibility, or verifiability were excluded to ensure the reliability and validity of the analysis results.

4. Exclusion of Licenses in Foreign Languages:
    - Licensing agreements presented solely in foreign languages were excluded from the analysis due to potential challenges in accurate interpretation and understanding.

DISCUSSION

Researchers identified a Type of License for 98 out of 100 projects. Two projects lacked accessible information regarding their license type and were categorized as “Blank.” This designation means that a license might exist, but its type could not be determined. Projects with no identifiable license were labeled as “No License.” If No License applied, then the PFP Project operates under the copyright laws where the PFP Project is based.

What years were analyzed?

Data collection covered projects launched between 2017 and March 2024. Three PFP Projects in the dataset originated in 2017—one operates without a license (“No License”), while the other two adopted the NFT2.0 License. The analysis included these license types in the aggregate data.

What was the focus of the analysis?

The analysis examined three key trends: License Type, Country, and Changes Over Time. This approach sought to understand how IP licenses are used, identify areas of fragmentation, and highlight where further research is needed. The analysis focuses on projects using the NFT2.0 License, as it reflects the specific needs of PFP Projects. Since the NFT2.0 License was designed specifically for PFP Projects, its adoption—or lack thereof—offers valuable insights into the importance of specialized IP licenses and suggests areas for future study.

Tl;dr—What are the core takeaways of the analysis?

Trends by License Type

- **NFT2.0 standardization**—The NFT2.0 license is emerging as a global industry standard.
- **Limited Transfer of Image Rights**—The data suggests that PFP Projects are uncertain about whether to Limit the Transfer of Image Rights.

Trends by Country

- **United States**—Most PFP Projects were based in the United States.

Trends over time

- **Custom license**—The number of custom licenses has decreased.
- **No License**—there is an increase in the number of PPP Projects launching without an IP license (i.e., falls into the “No License” category), at least in the United States.

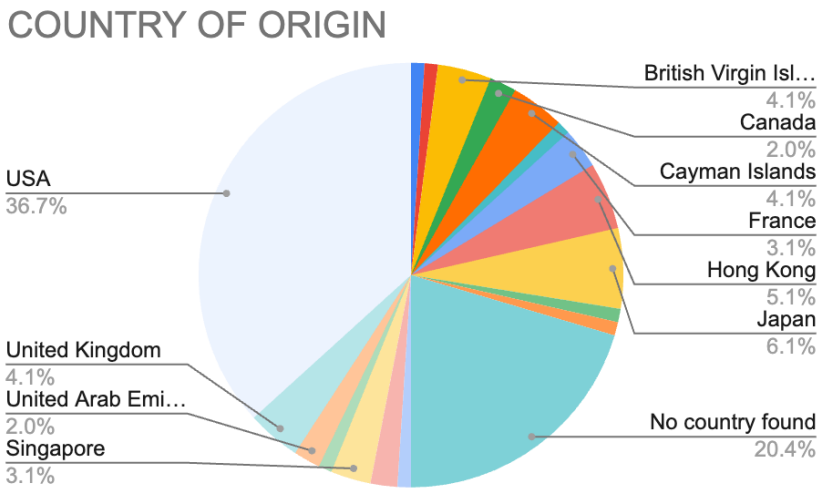
Analysis

PFP Projects are launched with a variety of objectives and contexts. Some, for example, start intending to build a community, others seek to launch entertainment companies, while other PFP Projects were designed to make money as quickly as possible. The purpose of any PFP Project will impact the type of license selected. This analysis, however, does not seek to determine why a project selected a specific license. Rather, the focus is on the outcome: What license was used, if any license was used at all.

Data: Tables are located in Appendix B

What types of IP Licenses are being used?

PFP Projects based in the United States accounted for 36% of all projects, the largest representation from any single country or region. A significant portion of the dataset comprised projects with no identifiable country of origin, making this the second-largest group. This lack of clarity raises concerns for token holders and investors, as uncertainty regarding a project's jurisdiction creates ambiguity about which copyright laws apply. Regionally, Asia ranked second at 15%, while Continental Europe lagged well behind at 5%. No PFP Projects were identified from Africa or South America.



**Countries with just one project are not included in this graph. For the complete list, see Table B in APPENDIX B DATA.*

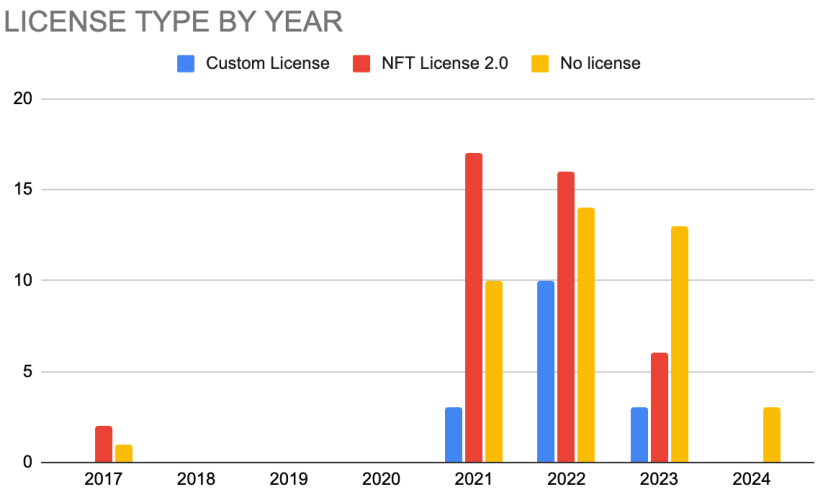
Data: Table B

How is the NFT2.0 license being used?

The creators of the NFT2.0 license initially released its predecessor, the NFT1.0 license, in 2018.[lii] The license was then updated in 2019 to the NFT2.0 version, incorporating additional terms. Starting in 2021, some PFP Projects in this report's dataset began

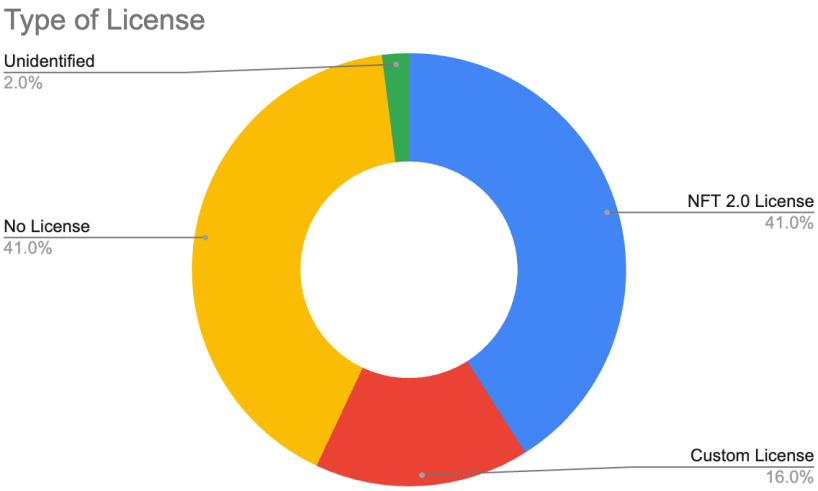
adopting the NFT2.0 license. In 2021, 56% of all PFP Projects used the NFT2.0 license, which dropped to 40% in 2022 and further declined to 27% in 2023.

**Numbers in the chart are raw data to illustrate trends, not percentages.*



Data: Table D

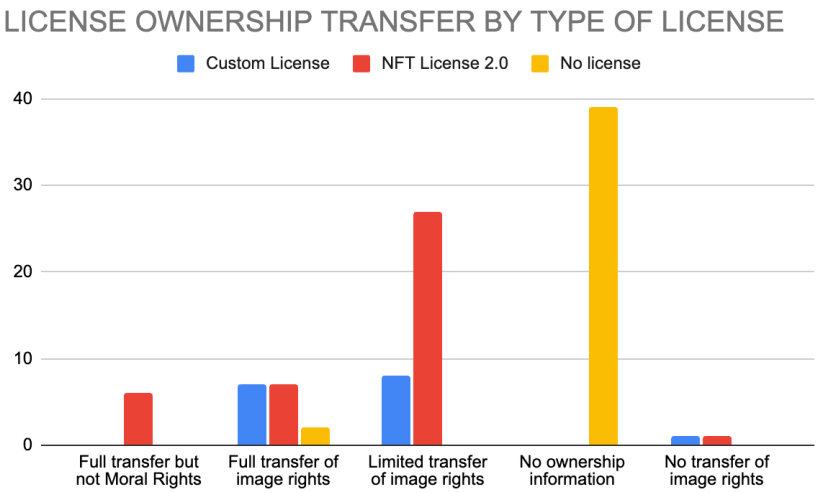
Nonetheless, the NFT2.0 license appears to be emerging as an industry standard. Out of the 98 PFP Projects, 41% of the PFP Projects used the NFT2.0 license. This number was equal to the same number of projects without a stated license (i.e., “No License”). Of those PFP Projects that used the NFT2.0 license, 56% were based in the United States. The connection with Cryptopunks—the oldest and most valuable PFP Project—might be the reason the NFT2.0 license is attractive for PFP Projects outside the United States, although no conclusions can be drawn from this research.



Data: Table A

Among the PFP Projects using the NFT2.0 License, 65% limited the transfer of image rights, while only 17% allowed a full transfer of image rights. This percentage (17%) increases to 31% if projects permitting full transfer, excluding the transfer of moral rights, are included. Only one project entirely prohibited the transfer of any image rights.

**Numbers in the chart are raw data to illustrate trends, not percentages.*



Data: Table E

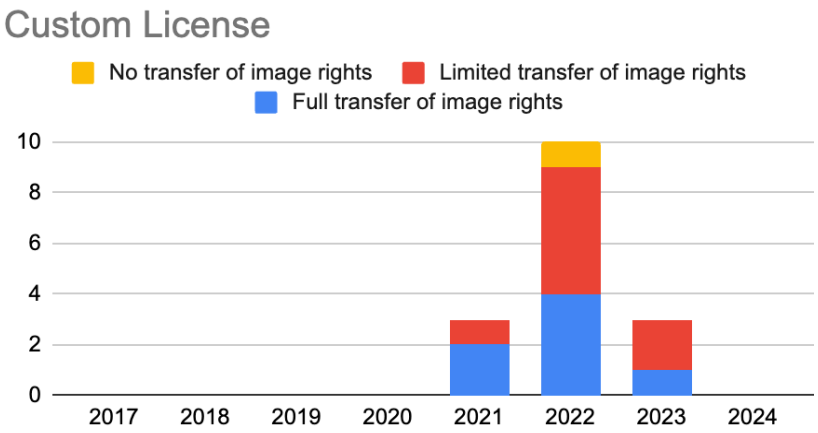
The creation of the NFT2.0 license illustrates the industry's perception that a unique type of IP license was required.[liii] The existence of the NFT2.0 license raises three questions:

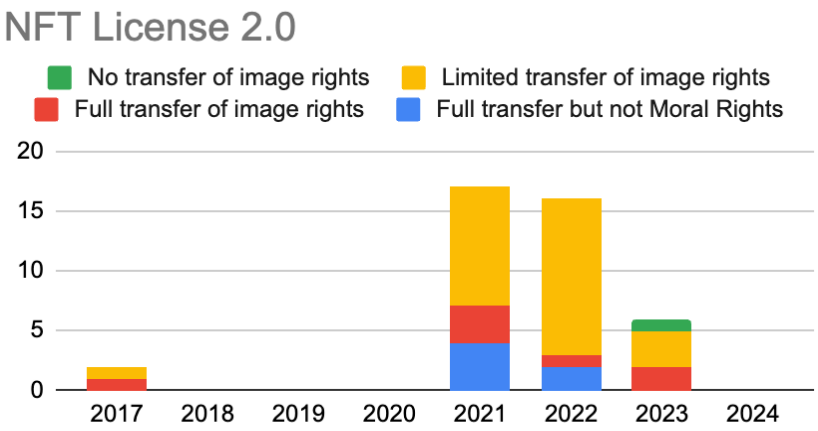
- Whether the NFT2.0 license is or can become an industry standard.
- What are the consequences of the NFT2.0 becoming an industry standard?
- And, a company based in the United States designed the NFT2.0 license—what does that mean for PFP Projects and token holders in other countries?

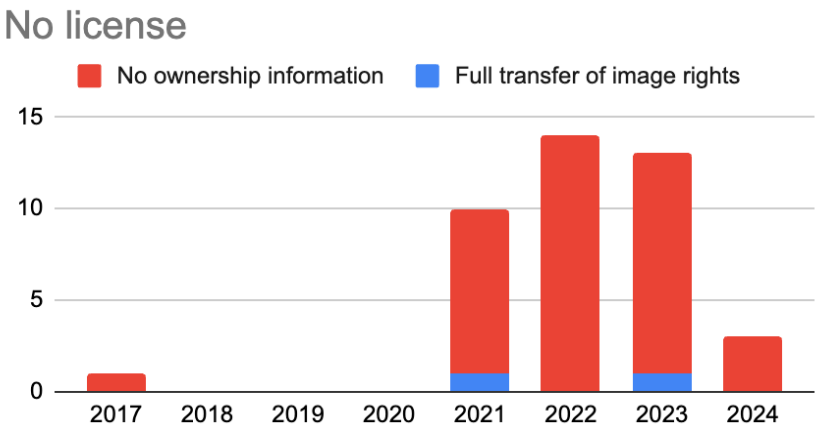
How are PFP Projects Limiting the Transfer of Image Rights?

Regardless of the Type of License (NFT2.0 license, Custom License, or No License), the data suggests that PFP Projects are uncertain about whether to Limit the Transfer of Image Rights. In 2021, 36% of all PFP Projects Limited Transfer of Image Rights. This number increased to 45% in 2022, but dropped in 2023 to 22% of PFP Projects.

**Numbers in the chart are raw data to illustrate trends, not percentages.*

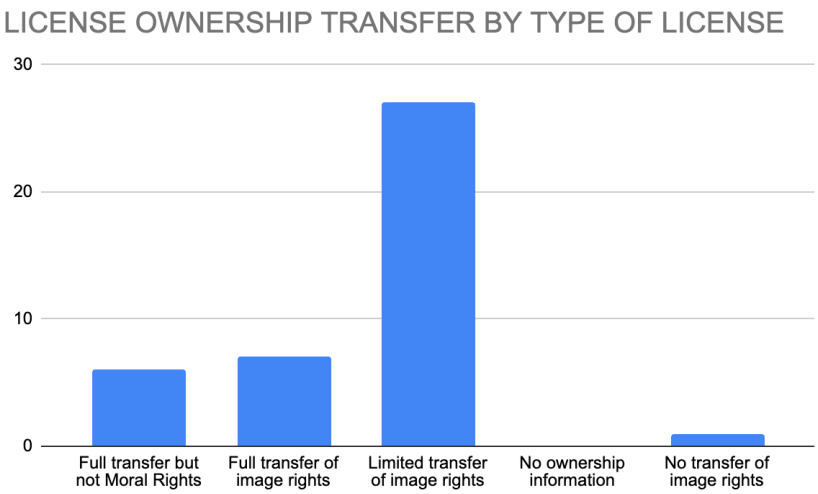






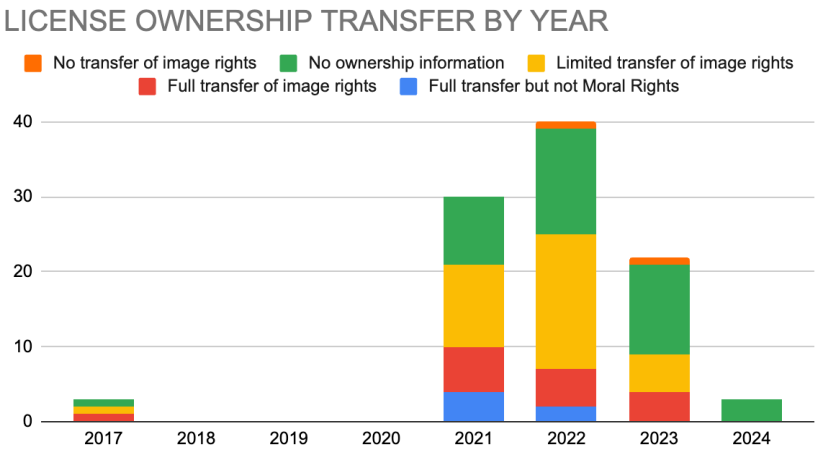
Data: Table F

Among PFP Projects using the NFT2.0 license: 17% allowed Full Transfer of Image Rights, while 66% imposed a Limit on Transfer of Image Rights. Notably, 14% of PFP Projects using NFT2.0 allowed Full Transfer of Image Rights withholding only Moral Rights. If that group is combined with the Full Transfer of Image Rights, then 31% of PFP Projects using the NFT2.0 functionally allowed full transfer.



Data: Table E (modified)

The use of the NFT2.0 License does not necessarily determine whether a PFP Project limits the transfer of image rights. For instance, projects using a Custom License were almost evenly divided, with 43% allowing full transfer of image rights and 50% imposing limitations. Additionally, the use of Custom Licenses shows considerable variation over time. In 2022, 62.5% of projects with a Custom License limited the transfer of image rights, compared to only 12.5% in 2021 and 25% in 2023. Despite these fluctuations, Custom License projects generally display a high tendency to limit transfer rights. Out of 16 Custom Licenses in total, restrictions on image rights were imposed 33%, 50%, and 67% of the time in 2021, 2022, and 2023, respectively.



Data Table G

The data suggests that PFP Projects across all license types are increasingly limiting token holders' ability to transfer image rights. Because of the small sample size, it is

unclear what this trend signifies. Some may view these restrictions as contrary to the principles of decentralization, while others might interpret them as an effort to provide greater clarity to token holders or to protect individuals from unauthorized use of their images. Further research is needed to understand the underlying reasons for these limitations.

The practice of restricting image transfers raises several philosophical, legal, and practical questions. Given that NFTs operate on decentralized protocols, why are PFP Projects imposing more restrictions on token holders? Legally, the rationale for limiting the transfer of image rights needs to be examined—is this a decision shaped by the unique business models of digital assets, a consequence of using IP licenses rather than contracts, or another factor? Economic considerations also come into play; for instance, does the decision to limit image rights depend on whether the project is seeking or has received venture capital? Venture capital firms may prefer clearly defined intellectual property rights to protect their investments.

The common use of the NFT2.0 License to limit image rights raises an additional question: the NFT2.0 License was specifically designed for PFP Projects, yet its terms may encourage restrictions that seem to contradict the decentralized nature of token holder communities. This paradox suggests a need for deeper exploration of how the NFT2.0 License affects the power dynamics within PFP Projects.

US Data

This research focused on the United States for two reasons. First, the Center is based in the U.S., and the researchers have a greater familiarity with U.S. copyright law than with laws in other jurisdictions. Second, the researchers used OpenSea, a US based company, as the marketplace to study. Many of the largest and most well-known PFP Project marketplaces are based in the US, but by no means are all NFT marketplaces based in the US.[liv] Therefore, the predominance of U.S.-based PFP Projects in this study should not be interpreted as evidence of U.S. dominance in the NFT market. This limitation reflects a clear bias in data collection. Nonetheless, a focus on the United States provides a valuable starting point for analyzing the evolution of IP licenses in PFP Projects, especially since many of the largest projects by valuation are U.S.-based, and the NFT2.0 License is rooted in U.S. copyright law.

PFP Projects based in the United States made up 36% of all projects, by far the most from any country (or region). Compare the US with Europe: Continental Europe made up just 5% of the PFP Projects. Continental Europe plus the UK had 9%. Continental Europe plus the UK, Australia, Canada, Caribbean islands, and New Zealand totaled 24% of the projects, still just two-thirds of the United States.

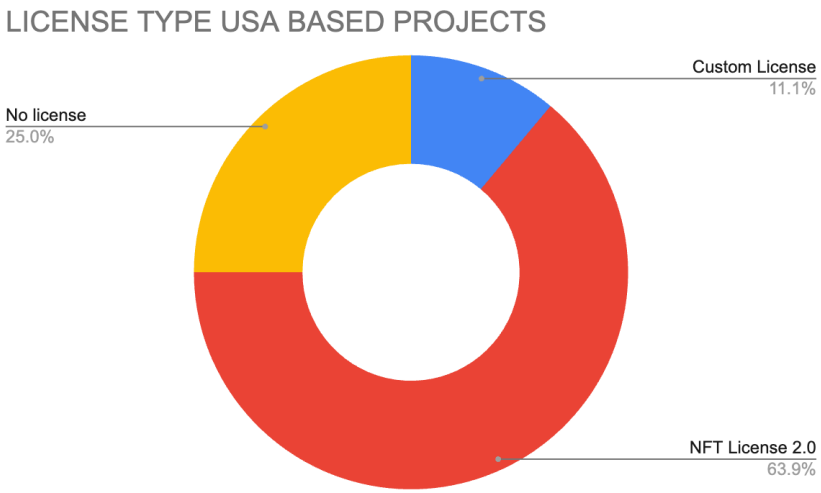
Data: Table B (modified)

USA ORIGIN	Europe ORIGIN	Continental Europe+UK, Australia, Canada, Caribbean islands & New Zealand ORIGIN
36%	5%	24%

The dominance of U.S.-based PFP Projects warrants further exploration, especially since creating an NFT requires only an internet connection.[lv] Marketplaces provide user-friendly tools; for example, OpenSea Studio allows users to mint NFTs into their crypto wallets without any coding knowledge.[lvi] Therefore, NFT creation is not inherently restricted to the United States. Binance, the world's largest crypto exchange, operates an NFT marketplace and is not based in the U.S.[lvii] Still, OpenSea's status as the largest NFT marketplace underscores the significant role of the U.S. in the NFT and PFP Project space.

If the sample data accurately reflects US dominance in PFP Projects, this trend merits further study by legal scholars and policymakers. Research could examine whether the U.S. intellectual property legal framework, or other factors such as access to capital, drive PFP Projects to launch in the United States. Policymakers could use this research to inform strategies for maintaining the U.S.'s leadership in this sector and to develop robust consumer protection laws and practices.

In this study, 37% of the 98 projects identified were based in the U.S. Among these, the NFT2.0 license was the most commonly used, accounting for 64% of all licenses. The second most common was the absence of a license, comprising 25%.

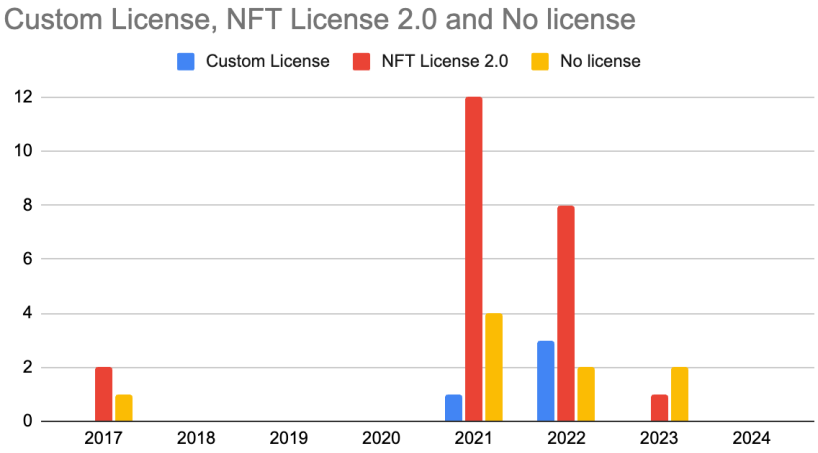


Data: Table H

Type of License by year – PFP Projects from the United States

NFT2.0 licenses were the most commonly used type of IP license in the US. The rate of adoption might indicate the value of a template for US based PFP Projects to use. Two projects launched in 2017, for example, later adopted the NFT2.0 license, which did not exist until 2018. However, the use of the NFT2.0 license decreased during the timeframe of the data analyzed. In 2021, 71% of US PFP Projects used the NFT 2.9 license. That number dropped to 62% in 2022, just 33% in 2023, and 0% in 2024. Notably, the number of projects using Custom Licenses also dropped to 0%. Thus, while no firm conclusions can be drawn, US-based PFP Projects appear to be still experimenting.

**Numbers in the chart are in absolute numbers to illustrate trends, not percentages.*

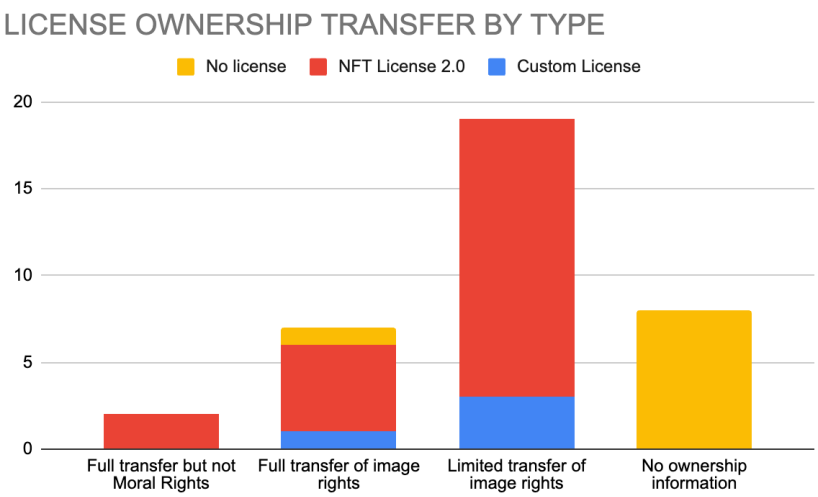


Data: Table I

Image Rights used by Type of License – PFP Projects from the United States

U.S.-based PFP Projects appear to be seeking to retain some control over their artwork, with 52% limiting the transfer of image rights. This percentage rises to 70% among projects using the NFT2.0 license. Only 9% of all projects allow a full transfer of image rights, though this increases to 39% when including those that allow full transfer except for moral rights. It remains unclear if the NFT2.0 license incentivizes these limitations. Further research is needed to understand why PFP Projects opt for either full transfer or limitations on image rights.

**Numbers in the chart are in absolute numbers to illustrate trends, not percentages.*

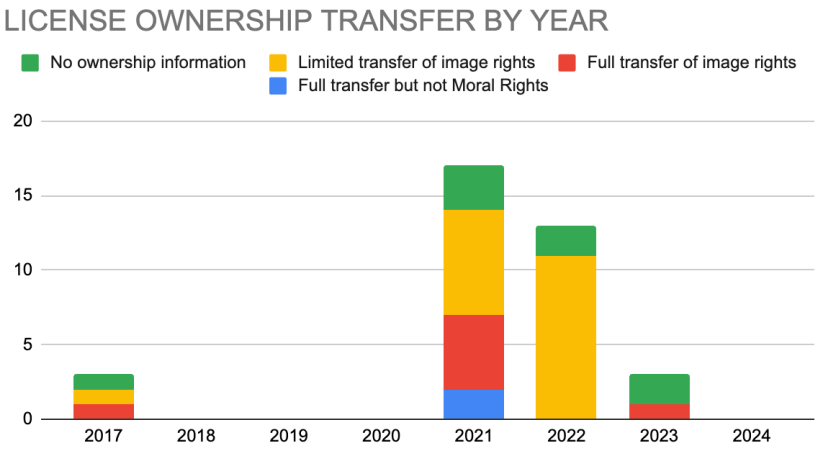


Data: Table J

Image Rights used by year – PFP Projects from the United States

The most notable trend in the data is the decline in projects limiting the transfer of image rights. Overall, 52% of projects imposed these limitations. In 2021, 41% of projects did so, rising to 85% in 2022. However, by 2023 and 2024, no projects (0%) used the Limited Image Rights transfer. The cause of this decline is unclear, but one potential area for further investigation is the correlation between this trend and the decreased use of the NFT2.0 license among U.S.-based projects.

**Numbers in the chart are in absolute numbers to illustrate trends, not percentages.*

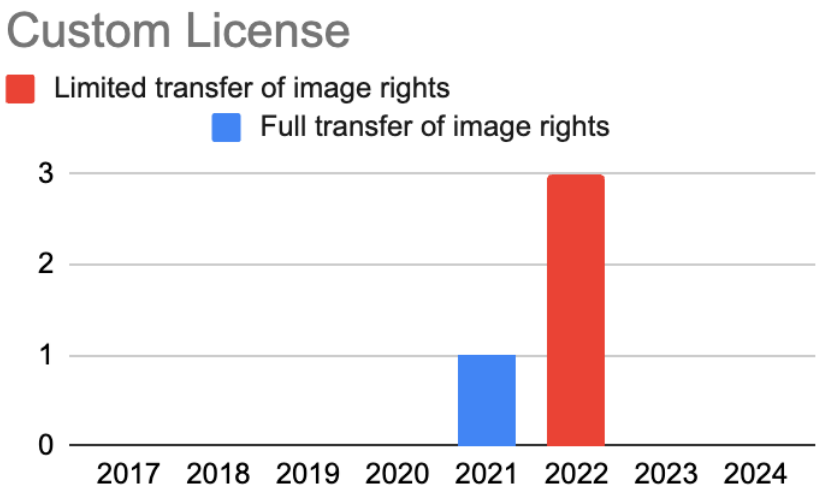


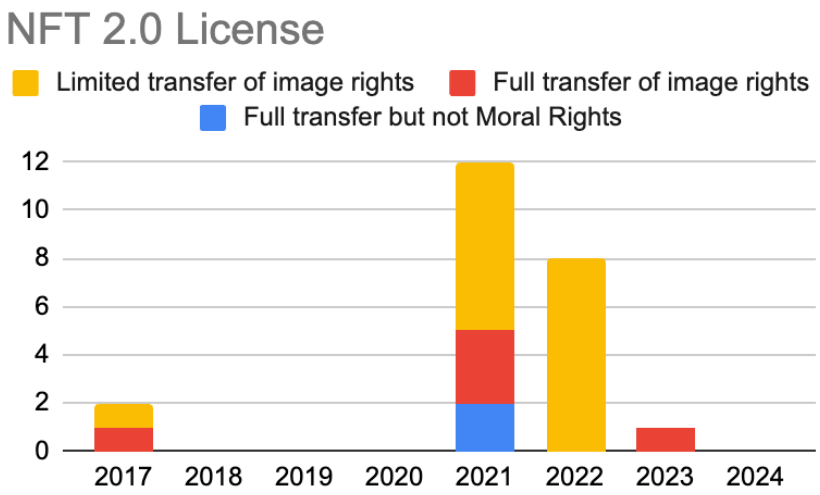
Data: Table K

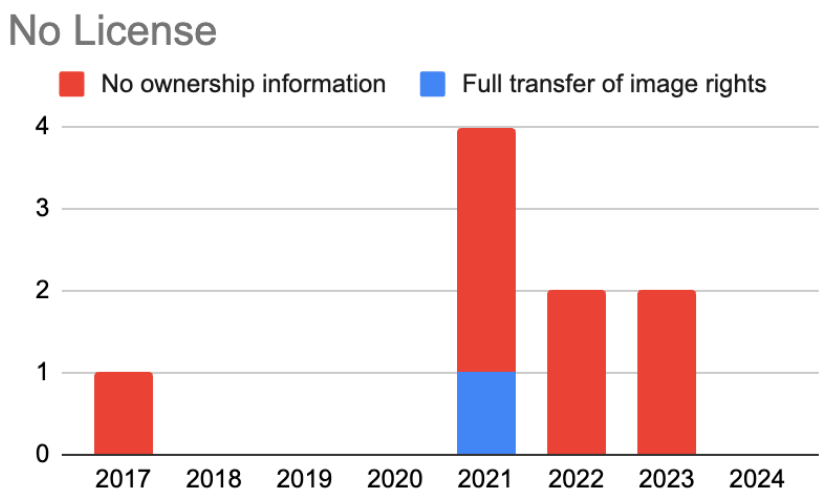
Image Rights used by Type of License by year – PFP Projects from the United States

The year 2021 marked peak experimentation among NFT2.0 license users. That year, 58% of projects Limited the Transfer of Image Rights, 17% allowed full transfer but not

moral rights, and 25% allowed a Full Transfer of Image Rights. These patterns fluctuated in the following years. In 2022, all NFT2.0 projects (100%) Limited Image Rights transfer, while the sole 2023 project using the NFT2.0 license permitted Full Transfer of Image Rights, showing a continued appetite for experimentation.







Data: Table L

A few caveats on US data bias

First, using data from OpenSea may introduce regional bias, as OpenSea, while the largest NFT marketplace, is based in the United States. Second, the emphasis on economic value may reflect access to capital rather than the popularity or widespread ownership of PFP Projects. Third, this research focuses solely on PFP Projects and excludes categories like gaming. Notably, the two most popular gaming projects are not listed on OpenSea,[lviii] and their market value significantly surpasses that of other NFT projects. Therefore, these factors might overstate the influence of the U.S. in the data. Despite these caveats, the global accessibility of NFT platforms and blockchain technologies makes the U.S. bias a topic worth investigating. Anyone worldwide can access the tools to buy, sell, or create an NFT at a relatively low cost.

Trends over time

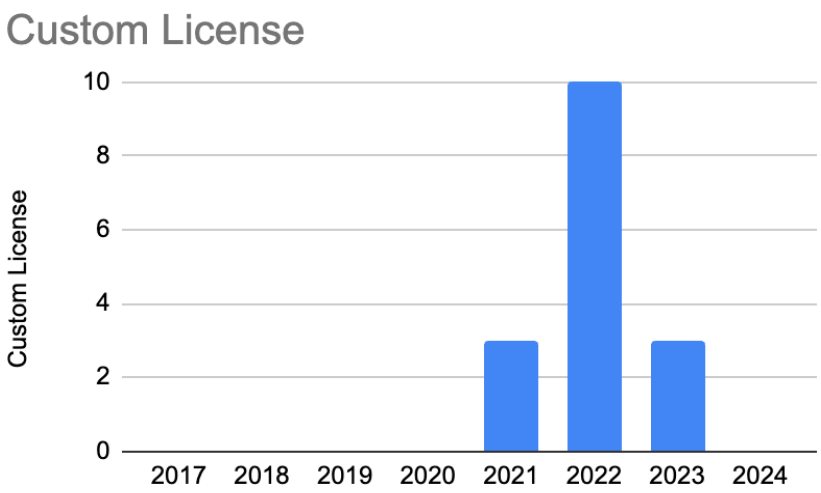
The next section examines three trends derived from the aggregate data, not limited to the United States. Each trend relates to the use of an IP license or specific license terms. While these trends are descriptive and surface areas for further study, they are not conclusive. The years referenced correspond to when each PFP Project was launched. It is possible, for example, that a project launched in 2022 with no license later adopted the NFT2.0 License or a Custom License. For instance, the Moonbirds project updated its license four months post-launch.[lix] This timing does not affect the analysis since the data captures the license status as of now. A project launched in 2022 that now uses an NFT2.0 License is recorded as such for 2022.

Custom License

Throughout the study period, the number of PFP Projects using a Custom License has declined. This decrease suggests that industry practices may be solidifying, even if they

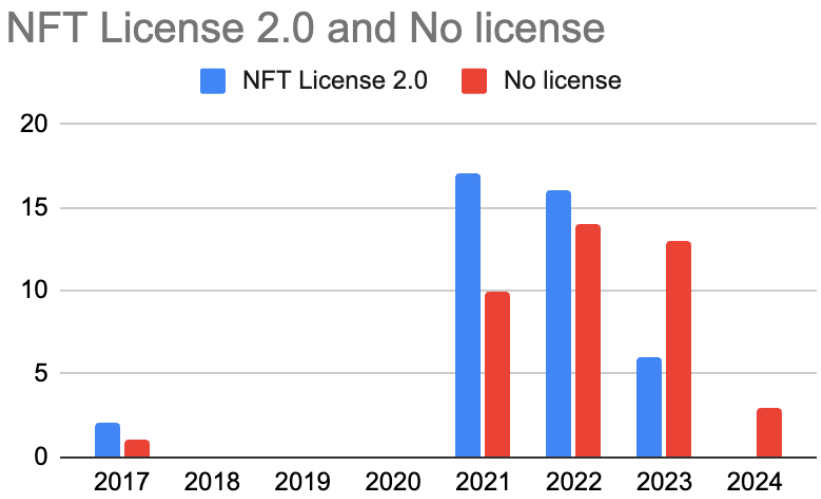
have not yet reached the level of an industry standard. It is costly to create an IP license, let alone a Custom IP license. This begs the question—what alternative IP license are PFP Projects adopting?

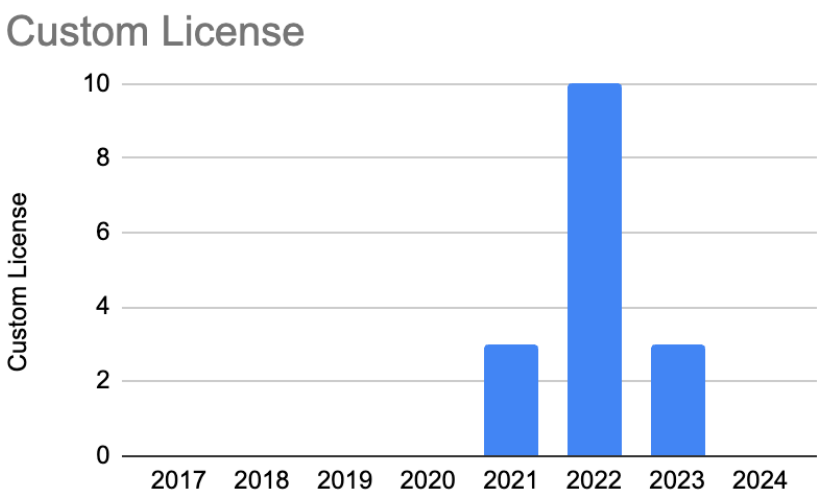
It is too early, and the sample size is too limited, to draw definitive conclusions. From 2021 to 2024, PFP Projects used a Custom License in 10%, 25%, 15%, and 0% of cases, respectively.



Data: Table D (modified)

By contrast, PFP Projects did not have a license (“No License”) 30%, 35%, and 59% of the time, respectively. NFT2.0 licenses during this time accounted for 56%,40%, and 27% of the time, respectively.



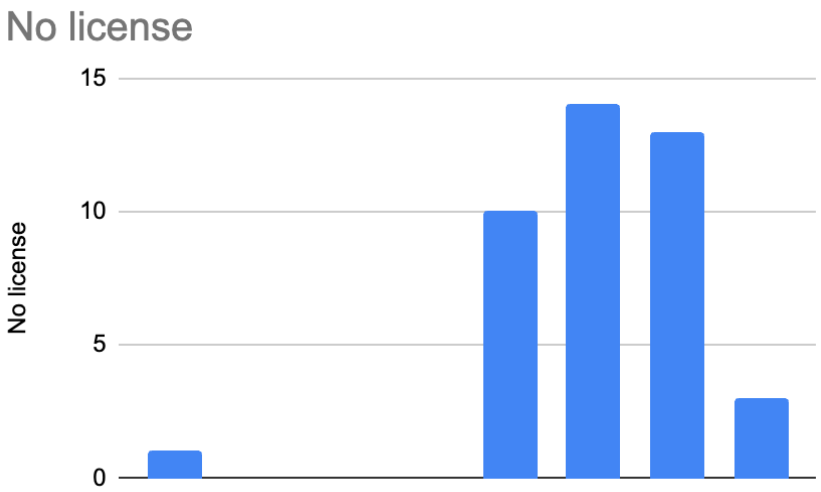


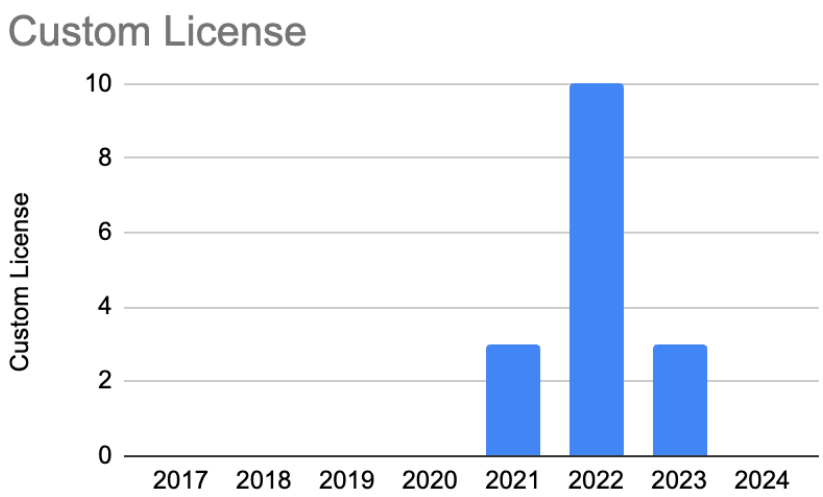
Data: Table D (modified)

Given the limited dataset, it is unclear whether PFP Projects that would otherwise use a Custom License are opting for No License instead of the NFT2.0 License. Geographic factors, for example, may play a role; since the NFT2.0 License is U.S.-based, projects outside the U.S. might avoid the costs of creating a Custom License while also choosing not to adopt a U.S. copyright framework. Additional studies focused on individual countries are needed to better understand regional trends and motivations.

No License

The number of PFP Projects launching without a discernible IP license (“No License”) is increasing. Although this trend falls outside the direct scope of the NFT2.0 analysis, it is notable given that PFP Projects have access to IP licenses specifically designed for them, such as NFT2.0 and CBE.





Data: Table D (modified)

Online marketplaces such as OpenSea may currently have an incentive to overlook a PFP Project's lack of a license. Mandating a license could introduce additional friction, potentially driving PFP Projects to competitors that do not impose such requirements. The failure of marketplaces to address the absence of licenses, however, and the resulting opaqueness poses several challenges. It encourages PFP Projects to obscure important information, hinders the adoption of best practices by well-intentioned projects, and increases the risk of customer confusion. These issues create conditions that may prompt government intervention.[lx]

Areas for further study

This research raises new questions and highlights the need for a more extensive dataset that includes as many PFP Projects as possible. Such a dataset would allow researchers to explore issues both within the scope of this report and beyond. Two primary areas for further investigation emerge: the characteristics of U.S.-based PFP Projects and the tensions within existing IP licenses.

Focusing on the dominance of U.S. PFP Projects could guide policymakers in developing regulations that both protect consumers and foster industry growth. NFT marketplaces, for example, are well positioned to introduce industry practices that protect consumers. Moreover, NFT marketplaces have an incentive to take actions before government intervention. Legal scholars can develop recommendations for better tools and practices to protect consumers.

With respect to industry growth, there is a need for further research to examine the impact of the U.S. copyright regime on intellectual property rights, the role of venture capital in encouraging the adoption of IP licenses, and the best practices U.S.-based

NFT marketplaces should adopt to enhance market competition and consumer protection.

More specific to licenses: Additional study is necessary to examine the tension indicated by certain trends. The launch of the NFT2.0 license (and CBE) provide evidence that existing IP licenses, such as the Creative Commons License, did not address the needs of PFP Projects. Nonetheless, as the next section explains, certain factors demonstrate that the industry is still far from a solution, or industry standard.

Tensions Within Existing IP Licenses

Additional legal analysis is required to address the tensions suggested by current trends in IP licensing. The creation of the NFT2.0 License and the CBE License indicates that the industry does not believe existing licenses, such as the CC0, fully meet the needs of PFP Projects. That uncertainty aside, as discussed in the next section, the industry is still far from a solution, or industry standard.

Competing IP licenses

There are two primary IP licenses developed specifically for PFP Projects: NFT2.0 and CBE. Notably, the NFT2.0 License is a second iteration, and the CBE License was created after NFT2.0. This points to two core issues: first, that the space is still in its infancy, and second, that certain issues remain unresolved. Key questions include: What gaps did the NFT1.0 License leave unaddressed that led to the creation of NFT2.0? Why has NFT2.0 been more successful than NFT1.0? What shortcomings in NFT2.0 does the CBE License aim to fill, and why has the CBE License not seen widespread adoption despite its improvements?

Lack of industry standard

While the NFT2.0 License is prevalent, it has yet to become the industry standard. Its dominance in this study is largely because of the substantial adoption by U.S.-based PFP Projects. This raises several questions: Is the NFT2.0 License primarily limited to U.S.-based projects? If so, what licenses do non-U.S. projects require? Is there potential for a global IP standard, or would regional standards (e.g., for Europe, Asia, South America, Africa) be more effective? Alternatively, will PFP Projects and other NFT-related ventures push other countries to adopt the U.S. copyright framework? These questions present opportunities for legal scholars worldwide to conduct data-driven research that can inform policy and practice.

Limits on transfer of images

The trend toward limiting image transfer rights seems counter to the principles of decentralization, which is based on empowering peer-to-peer transactions. Why, then, are PFP Projects increasingly imposing such limits? Is this a result of using IP licenses instead of contractual agreements? Or are PFP Projects not truly vehicles for decentralization, but a facade for companies attempting to challenge traditional media?

These questions merit further exploration to understand the evolving dynamics of PFP Projects.

CONCLUSION

In the end, this report focused on the NFT2.0 License for two main reasons. First, it includes elements from a User Agreement,[lxi] which suggests an attempt to address legal issues that existing IP licenses do not cover (even though the effectiveness of this approach remains uncertain. Second, the rapid adoption of the NFT2.0 License, particularly in the United States, points to industry demand for a new form of IP licensing. Further research on IP licensing in PFP Projects could assist U.S. policymakers in developing legal frameworks that support decentralized protocols.

This study also underscores the urgent need for NFT marketplace platforms, to require that PFP Projects display the relevant IP license with their NFTs. By doing so, both industry and consumers benefit. The likelihood of government intervention is reduced as well. Making IP licenses visible to NFT buyers aligns with best practices in software development and digital art, where creator licenses are consistently displayed.[lxii] It is also important that PFP Project creators understand the implications of using the NFT2.0 License, creating a custom license, or adopting a Creative Commons License, which, once used, becomes irrevocable.

Finally, analyzing 100 projects during a three-month timeframe demonstrated the value for further study. There are millions of NFTs, and thousands of PFP Projects. Grant support to expand this research would enable the use of technical tools to collect more data, in real-time, and analyze it with more detail. Numerous platforms, such as OpenSea, have accessible APIs that can be used for further research.[lxiii]

Additional funding would help the USF Center for Law, Tech, and Social Good address two key challenges that face legal researchers in technology and policy. First, the rapid evolution of the NFT space makes it difficult for researchers to keep pace. Access to near real-time data will benefit researchers, as well as the industries, consumers, and policymakers informed by their work. Second, funding would support educational efforts by incorporating this project's data into the Center's Government Training program.[lxiv] Providing policymakers with concrete use cases, rather than hypotheticals, will result in more informed public policy regarding blockchain technology.

FUNDING

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ACKNOWLEDGEMENTS

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AUTHOR

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APPENDIX

APPENDIX A SCREENSHOT

SEE FOLDER: Screenshot of projects. A screenshot was taken at 12:17 PM on March 12, 2024, to ensure consistency throughout the duration of the current research.

To view the image, please go to this link.

APPENDIX B DATA

A. Overview by type of license (PIE CHART)

TOTAL	NFT2	CUSTOM	NO LICENSE	UNIDENTIFIED
	41	16	41	2

Overview by country (GEOGRAPHIC MAP)

B. Overview by country (PIE CHART)

PROJECT COUNTRY OF ORIGIN	
Australia	1
Bahamas	1
British Virgin Islands	4
Canada	2
Cayman Islands	4
China	1
France	3
Hong Kong	5
Japan	6
N/A	4
Netherlands	1
New Zealand	1
No country found	14
No Information	2
Portugal	1
Saint Kitts and Nevis	2
Singapore	3
Thailand	1
United Arab Emirates	2
United Kingdom	4
USA	36
Grand Total	**98**

C. Type of license by country (STACKED CHART)

LICENSE TYPE	PROJECT COUNTRY OF ORIGIN	COUNT of LICENSE TYPE
Custom License	British Virgin Islands	4
	Cayman Islands	1
	France	1
	Japan	2
	Netherlands	1
	No country found	2
	Portugal	1
	USA	4
Custom License Total		16
NFT License 2.0	Bahamas	1
	Canada	1
	Cayman Islands	2
	England	1
	Hong Kong	2
	Japan	1
	New Zealand	1
	No country found	1
	Saint Kitts and Nevis	2
	Singapore	3
	United Arab Emirates	1
	United Kingdom	2
	USA	23
NFT License 2.0 Total		41
No license	Australia	1
	Canada	1
	Cayman Islands	1
	China	1
	France	2
	Hong Kong	3
	Japan	3
	N/A	4

	No country found	11
	No Information	2
	Thailand	1
	UAE	1
	UK	1
	USA	9
No license Total		41
Grand Total		98

D. Type of license by year (STACKED CHART)

LICENSE TYPE	2017	2018	2019	2020	2021	2022	2023	2024	TOTAL
Custom License	0	0	0	0	3	10	3	0	16
NFT License 2.0	2	0	0	0	17	16	6	0	41
No license	1	0	0	0	10	14	13	3	41
Grand Total	3	0	0	0	30	40	22	3	98

E. Subcategory total by Type (STACKED CHART)

LICENSE OWNERSHIP TRANSFER	Custom License	NFT License 2.0	No license	Grand Total
Full transfer but not Moral Rights		6		6
Full transfer of image rights	7	7	2	16
Limited transfer of image rights	8	27		35
No ownership information			39	39
No transfer of image rights	1	1		2
Grand Total	16	41	41	98

F. Subcategory by year (STACKED CHART)

LICENSE TYPE	LICENSE OWNERSHIP TRANSFER	2017	2018	2019	2020	2021	2022	2023	2024	TOTAL
Custom License	Full transfer of image rights	0	0	0	0	2	4	1	0	7
	Limited transfer of image rights	0	0	0	0	1	5	2	0	8
	No transfer of image rights	0	0	0	0	0	1	0	0	1

Custom License Total										16
NFT License 2.0	Full transfer but not Moral Rights	0	0	0	0	4	2	0	0	6
	Full transfer of image rights	1	0	0	0	3	1	2	0	7
	Limited transfer of image rights	1	0	0	0	10	13	3	0	27
	No transfer of image rights	0	0	0	0	0	0	1	0	1
NFT License 2.0 Total										41
No license	Full transfer of image rights	0	0	0	0	1	0	1	0	2
	No ownership information	1	0	0	0	9	14	12	3	39
No license Total										41
Grand Total		3	0	0	0	30	40	22	3	98

G. Subcategory by year (STACKED CHART)

	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**TOTAL**
Full transfer but not Moral Rights	0	0	0	0	4	2	0	0	6
Full transfer of image rights	1	0	0	0	6	5	4	0	16
Limited transfer of image rights	1	0	0	0	11	18	5	0	35
No ownership information	1	0	0	0	9	14	12	3	39
No transfer of image rights	0	0	0	0	0	1	1	0	2
Grand Total	3	0	0	0	30	40	22	3	98

H. Graph: Pie Chart

	PROJECT COUNTRY OF ORIGIN
LICENSE TYPE	USA
Custom License	4
NFT License 2.0	23
No license	9
Grand Total	36

I. Stacked by year

LICENSE TYPE	2017	2018	2019	2020	2021	2022	2023	2024	TOTAL
Custom License	0	0	0	0	1	3	0	0	4
NFT License 2.0	2	0	0	0	12	8	1	0	23
No license	1	0	0	0	4	2	2	0	9
Grand Total	3	0	0	0	17	13	3	0	36

J. Subcategory by type Graph: Stacked by type

LICENSE OWNERSHIP TRANSFER	Custom License	NFT License 2.0	No license	Grand Total
Full transfer but not Moral Rights		2		2
Full transfer of image rights	1	5	1	7
Limited transfer of image rights	3	16		19
No ownership information			8	8
Grand Total	4	23	9	36

K. Subcategory by year

LICENSE OWNERSHIP TRANSFER	2017	2018	2019	2020	2021	2022	2023	2024	TOTAL
Full transfer but not Moral Rights	0	0	0	0	2	0	0	0	2
Full transfer of image rights	1	0	0	0	5	0	1	0	7
Limited transfer of image rights	1	0	0	0	7	11	0	0	19
No ownership information	1	0	0	0	3	2	2	0	8
Grand Total	3	0	0	0	17	13	3	0	36

L. US Type with Subcategory by year

LICENSE TYPE	LICENSE OWNERSHIP TRANSFER	2017	2018	2019	2020	2021	2022	2023	2024	TOTAL
Custom License	Full transfer of image rights	0	0	0	0	1	0	0		1
	Limited transfer of image rights	0	0	0	0	0	3	0		3
Custom License Total										
NFT License 2.0	Full transfer but not Moral Rights	0	0	0	0	2	0	0		2
	Full transfer of image rights	1	0	0	0	3	0	1		5

	Limited transfer of image rights	1	0	0	0	7	8	0		16
NFT License 2.0 Total										
No license	Full transfer of image rights	0	0	0	0	1	0	0		1
	No ownership information	1	0	0	0	3	2	2		8
No license Total										
Grand Total		3	0	0	0	17	13	3		36

[i] In 2021 the market value was $41B, which dropped to $10B in two years. Natasha Dailey, *NFTs Ballooned to a $41 Billion Market in 2021 and Are Catching up to the Total Size of the Global Fine Art Market*, MARKETS INSIDER, https://markets.businessinsider.com/news/currencies/nft-market-41-billion-nearing-fine-art-market-size-2022-1 (last visited Jul 16, 2024).

[ii] NFTs Are Retaining Value, Researchers Say, https://www.forbes.com/sites/digital-assets/2023/11/10/nfts-are-retaining-value-researchers-say/?sh=6d5096b2d939 (last visited Jul 16, 2024).

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[iv] NFTs Are Retaining Value, Researchers Say, *supra* note 1.

[v] Attorney General Kamala D. Harris Secures Global Agreement to Strengthen Privacy Protections for Users of Mobile Applications, State of California - Department of Justice - Office of the Attorney General (2012), https://oag.ca.gov/news/press-releases/attorney-general-kamala-d-harris-secures-global-agreement-strengthen-privacy (last visited Oct 10, 2024).

[vi] Overview, OPENSEA DEVELOPER DOCUMENTATION, https://docs.opensea.io/reference/api-overview (last visited Jul 17, 2024).

[vii] Top NFT Collection Prices, Charts & Tracker, https://www.forbes.com/digital-assets/nft-prices (last visited Jul 22, 2024).

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[xi] Louis Vuitton, Cartier, Prada to Use Bespoke Blockchain to Tackle Counterfeit Goods - CoinDesk, https://www.coindesk.com/business/2021/04/20/louis-vuitton-cartier-prada-to-use-bespoke-blockchain-to-tackle-counterfeit-goods/ (last visited Jul 17, 2024).

[xii] To read more about the technical standard of ERC-721, see, CryptoPunks, https://cryptopunks.app/ (last visited Jul 22, 2024); ERC-721: Non-Fungible Token Standard, ETHEREUM IMPROVEMENT PROPOSALS, https://eips.ethereum.org/EIPS/eip-721 (last visited Jul 22, 2024).

[xiii] https://www.coindesk.com/business/2022/03/22/bored-apes-owner-yuga-labs-raises-450m-led-by-a16z/

[xiv] About, https://doodles.app/about (last visited Jul 17, 2024). See, also, Doodles Is "No Longer an NFT Project," Co-Founder Says, https://www.coindesk.com/web3/2023/03/16/doodles-is-no-longer-an-nft-project-co-founder-says/ (last visited Jul 17, 2024).

[xv] Penguins Toys | Pudgy Penguins, PUDGY BRAND, https://shop.pudgypenguins.com/collections/penguins-toys (last visited Jul 17, 2024); NFT Project Pudgy Penguins Raises $9M, https://www.coindesk.com/business/2023/05/09/nft-project-pudgy-penguins-raises-9m/ (last visited Jul 17, 2024).

[xvi] See, e.g., Joshua Fairfield, *Tokenized: The Law of Non-Fungible Tokens and Unique Digital Property*, 97 97 INDIANA LAW J. 1261 2022 (2022), https://www.repository.law.indiana.edu/ilj/vol97/iss4/4; POSSESSING INTANGIBLES, (last visited Jul 15, 2024).

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[xviii] *Id.*; Andres Guadamuz, *Moonbirds and CC0: Problems with NFT Licensing and the Public Domain*, TECHNOLLAMA (May 1, 2024), https://www.technollama.co.uk/moonbirds-and-cc0-problems-with-nft-licensing-and-the-public-domain (last visited May 21, 2024); Moonbirds abruptly switches to CC0, upsetting some holders, THE BLOCK, https://www.theblock.co/post/161819/moonbirds-ruffles-some-holders-feathers-with-abrupt-copyright-switch (last visited Jul 17, 2024).

[xix] About CC Licenses, CREATIVE COMMONS, https://creativecommons.org/mission/ CC Mission statement: "*CC empowers individuals and communities around the world by equipping them with technical, legal, and policy solutions to enable sharing of knowledge and culture in the public interest*."

[xx] Shanti Escalante-De Mattei, *Yuga Labs Says It Does Not Have Copyright Registration Of Bored Ape Images, in New Court Documents*, ARTNEWS.COM (Jan. 26, 2023), https://www.artnews.com/art-news/news/yuga-labs-copyright-registration-bored-ape-yacht-club-nfts-1234655279/ (last visited Jul 20, 2024).

[xxi] See, e.g., Colesanti, *supra* note 4.

[xxii] Legal scholars have raised concerns regarding the lack of transparency in NFT marketplaces that might lead to bad behavior and anti-competitive consolidation that harms consumers. Such is the concern, that one academic proposes the Federal Trade Commission be used to "*slow market consolidation and counter anti-competitive practices…in NFT marketplaces*." J. Scott Colesanti, *Caging the Bored Ape: How the FTC's Expanded Anti-Monopoly Authority Can Tame "NFTS" for Web 3.0*, 15 Wm. & Mary Bus. L. Rev. 117 (2023), https://scholarship.law.wm.edu/wmblr/vol15/iss1/4; Other academics have begun to challenge the idea that NFTs are best managed under copyright law altogether. POSSESSING INTANGIBLES,; Joshua Fairfield, *Tokenized: The Law of Non-Fungible Tokens and Unique Digital Property*, 97 97 INDIANA LAW J. 1261 2022 (2022), https://www.repository.law.indiana.edu/ilj/vol97/iss4/4; THE PROPERTY LAW OF TOKENS. And that "*NFTs are personal property, not contracts (despite the "smart contracts" popular nomenclature) or pure intellectual property licenses (despite the currently governing law of digital assets like e-books). Because transactions in NFTs are in the form of a sale, the law of sales of personal property should apply*." Tokenized: The Law of Non-Fungible Tokens and Unique Digital Property, 97 Indiana Law Journal 1261 (2022). There is a substantive discussion regarding whether NFTs should be transacted through IP licenses or contracts. POSSESSING INTANGIBLES, 116 Nw. U. L. Rev. 1227, João Marinotti; While still others raise concerns of how intellectual property licenses are being used for private ordering. WHAT CONTRACTS CANNOT DO: THE LIMITS OF PRIVATE ORDERING IN FACILITATING A CREATIVE COMMONS, 74 Fordham L. Rev. 375, Niva Elkin-Koren; COPYRIGHT LAWMAKING AND PUBLIC CHOICE: FROM LEGISLATIVE BATTLES TO PRIVATE ORDERING; CORPORATE LAW AND PRIVATE ORDERING; LEX AI: REVISITING PRIVATE ORDERING BY DESIGN.

[xxiii] The Can't Be Evil NFT Licenses, A16Z CRYPTO (2022), https://a16zcrypto.com/posts/article/introducing-nft-licenses/ (last visited Jun 27, 2024).

[xxiv] Welcome to Yuga Labs, Home of BAYC, MAYC, Otherside, Cryptopunks, and Meebits, https://yuga.com (last visited Oct 1, 2024).

[xxv] SOULS - Collection | OpenSea, https://opensea.io/collection/souls (last visited Oct 1, 2024).

[xxvi] Article I, Section 8, Clause 8 of the US Constitution.

[xxvii] Register's Report on the General Revision of the U.S. Copyright Law (1961)

[xxviii] Register's Report on the General Revision of the U.S. Copyright Law (1961)

[xxix] Register's Report on the General Revision of the U.S. Copyright Law (1961)

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[xxxi] NFT License, NFT LICENSE, https://www.nftlicense.org/ (last visited Jun 11, 2024).

[xxxii] 17 U.S.C. § 109(a). The first sale doctrine provides that the "*exclusive statutory right to distribute copyrighted work applies only to the first sale of the work in question*."(see, *Microsoft Corp. v. Software Wholesale Club, Inc*., 129 F.Supp.2d 995, 1007 (S.D. Tex. 2000). An individual who has purchased a copy of a copyrighted work may do whatever they like with that copy without infringing on the rights of the copyright holder. For example, a collector may sell a rare book from their private collection without obtaining permission from the author or publisher.

[xxxiii] Berne Convention for the Protection of Literary and Artistic Works, https://www.wipo.int/treaties/en/ip/berne/index.html (last visited Aug 22, 2024).

[xxxiv] The Can't Be Evil NFT Licenses, A16Z CRYPTO (2022), https://a16zcrypto.com/posts/article/introducing-nft-licenses/ (last visited Jun 27, 2024).

[xxxv] NFT License, *supra* note 27.

[xxxvi] *Id.*

[xxxvii] *Id.*

[xxxviii] *Id.*

[xxxix] Dapper Labs, *NFT License 2.0: Why a NFT Can Do What No Other Creative IP Can Do*, Dapper Labs (Jan. 23, 2019), https://medium.com/dapperlabs/nft-license-2-0-why-a-nft-can-do-what-mickey-mouse-never-could-27673d5f29aa (last visited May 21, 2024).

[xl] *Id.*

[xli] *Id.*

[xlii] *Id.*

[xliii] *Id.*

[xliv] *Id.*

[xlv] About CC Licenses, *supra* note 17.

[xlvi] *Id.*

[xlvii] OpenSea, *supra* note 1.

[xlviii] John Lee Quigley Gilbert John, *The Top 8 NFT Marketplaces - Where to Buy NFTs*, BLOCKWORKS (2023), https://blockworks.co/news/your-guide-to-nft-platforms (last visited Jul 16, 2024).

[xlix] Rodeck, *supra* note 3; Gilbert, *supra* note 2; Rosenberg, *supra* note 3.

[l] "*The metric measures the lowest price for an NFT in a collection. It's often a good starting point for understanding the popularity of an NFT collection and the token's value over time*." Robert Stevens, *What Is an NFT Floor Price?*, (2022), https://www.coindesk.com/learn/what-is-an-nft-floor-price/ (last visited Jul 31, 2024).

[li] See Footnote supra

[lii] Dapper Labs, *NFT License 2.0: Why a NFT Can Do What No Other Creative IP Can Do*, DAPPER LABS (Jan. 23, 2019), https://medium.com/dapperlabs/nft-license-2-0-why-a-nft-can-do-what-mickey-mouse-never-could-27673d5f29aa (last visited May 23, 2024).

[liii] See, e.g., a discussion by the creators of the NFT license for more information. *Id*.

[liv] Rodeck, *supra* note 44.

[lv] How do I create an NFT? | OpenSea Help Center, https://support.opensea.io/en/articles/8867023-how-do-i-create-an-nft (last visited Jul 18, 2024); Crypto.com NFT: Buy NFTs from a leading Marketplace featuring top projects, CRYPTO.COM, https://crypto.com/nft (last visited Jul 18, 2024); How to create NFTs | Foundation, https://foundation.app/how-to-create (last visited Jul 18, 2024).

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[lx] One legal scholar is already proposing intervention by the Federal Trade Commission (FTC) to prevent anti-competitive practices in NFT marketplaces. J Scott Colesanti, *Caging the Bored Ape: How the FTC's Expanded Anti-Monopoly Authority Can Tame "NFTS" for Web 3.0*.

[lxi] Dapper Labs, *NFT License 2.0: Why a NFT Can Do What No Other Creative IP Can Do*, DAPPER LABS (Jan. 23, 2019), https://medium.com/dapperlabs/nft-license-2-0-why-a-nft-can-do-what-mickey-mouse-never-could-27673d5f29aa (last visited May 23, 2024). "The NFT License, at its core, is a user agreement. Any NFT creator can literally copy and paste this license into their terms of service, and it will govern what users can and can't do with their NFTs."

[lxii] See, e.g., Github, Licensing a repository, GITHUB DOCS, https://docs.github.com/en/repositories/managing-your-repositorys-settings-and-features/customizing-your-repository/licensing-a-repository (last visited Jul 24, 2024).; Flickr (Flickr: Creative Commons, https://www.flickr.com/creativecommons/ (last visited Jul 24, 2024).), and for a discussion on NFTs and licensing, see Knowns & Unknowns: NFTs & Intellectual Property | MakersPlace Editorial, (2022), https://rare.makersplace.com/2022/10/28/knowns-unknowns-nfts-intellectual-property/ (last visited Jul 24, 2024).

[lxiii] Overview, OPENSEA DEVELOPER DOCUMENTATION, https://docs.opensea.io/reference/api-overview (last visited Jul 17, 2024).

[lxiv] https://www.usfca.edu/law/school-life-careers/centers/center-law-tech-social-good/classes-trainings