

NFT MARKET

SAFE PRACTICES GUIDE

August 2021

SEPARATE THE SIGNAL FROM THE NOISE

NAVIGATE THE NFT MARKETS WITH CONFIDENCE



NonFungible.com

FOREWORD

The NFT Market has been in full craze mode since the start of the year.

We have witnessed multi-million-dollar sales almost every week with new projects announced each day, copycats are being created from copycats.

Differentiating the valuable assets from the fads, distinguishing diamonds from scams, that's what everyone who is looking to participate must learn to do before proceeding with any project.

From a buyer's perspective, there are many common sense questions to address before purchasing any asset.

- How to discover your way in such a dynamic, young and fast paced ecosystem?
- How to conduct an effective Due Diligence Process before buying an NFT?

On the other hand, from the point of view of investors, or Market researchers:

- How to know the data your using is reliable?
- Is there Market manipulation in the NFT industry?
- If so, what form does it take, how big is it and vitally, how to identify it?

We have always done our best to help the NFT industry remain as healthy and transparent as possible. In recent years, we have published several articles* on the risks and abuses within the ecosystem** in an effort to raise awareness among the various stakeholders. This year, we have decided to go even further and publish a comprehensive report which covers the good practices of Due Diligence in Wash Trading.

The purpose behind this report can be divided into five objectives:

1. To make the NFT world a healthier place for everyone.
2. Bring further transparency and honesty to the booming NFT Markets.
3. Reduce the volume of suspicious transactions.
4. Ensure the long-term sustainability of this market.
5. Promote individual responsibility, i.e: Do Your Own Research “DYOR”, Due Diligence, community whistleblowing etc..

* [Behaviors in the NFT ecosystem that we hope will decrease in 2020](#)

** [What is “wash trading” and why is it negative for non-fungible tokens?](#)



METHODOLOGY

This report has been divided into two parts. The first concerns the Due Diligence process and the questions to raise before the purchase of an NFT. The process may vary between Artworks to Video Game assets.

The second part aims to raise awareness around Market Manipulation patterns and has two objectives:

Help project creators and their communities recognize suspicious behaviors.

Whistleblowing practices that harm the ecosystem and mislead novice users.

What is Market Manipulation & Wash Trading?

Referring to the definition from [Investopedia](#) replacing the term “Security” with “Token” in the NFT context:

“

Wash trading is a process whereby a trader buys and sells a security for the express purpose of feeding misleading information to the Market. In some situations, wash trades are executed by a trader and a broker who are colluding with each other, and other times wash trades are executed by investors acting as both the buyer and the seller of the security.

”

In summary, Market manipulation includes any market transaction that is not aimed directly at buying or selling an asset, but which aims to influence the Market. Here are some examples of motivations behind Wash Trading:

1. Purchases made specifically to create the artificial illusion of demand for a specific project.
2. Purchases made to create hype or false demand for a specific kind of asset, publisher / artist, or for specific locations on a map.
3. Purchasing assets with the purpose of artificially inflating public metrics (showcasing the performance of the market)
4. Trading assets when each trade is rewarded by valuable tokens.



How we've analyzed the Markets?

As part of our study on Market Manipulation, we focused our analysis on two specific projects, from two major segments of the NFT industry:

- Collectibles
- Art

This report will not include any mention of individual project names, assets or addresses that have been implied in suspicious behavior. Our goal here is to promote educational content for the community in order to raise awareness in the ecosystem of any bad practices and the risks inherent in all developing markets.

The patterns and schemes described in this document are the result of many months of analysis and investigation by the NonFungible.com team, conducted 100% autonomously. The data we used (several millions worth of sales) came directly from the blockchain, without relying on any external third party.



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EDUCATED PURCHASES. INVEST WITH CONFIDENCE.

Since the start of 2018, NonFungible.com has been the largest NFT Market Database, scrapping 100% of NFT activity on the Ethereum blockchain, and soon, on all NFT-related chains!

Go further in your Due Diligence Process

Whether you are a VC, Business Angel or Family Fund, you need to have all the cards in hand before investing in an NFT-related project. Use concrete, exhaustive data and exclusive metrics to make the right decisions.

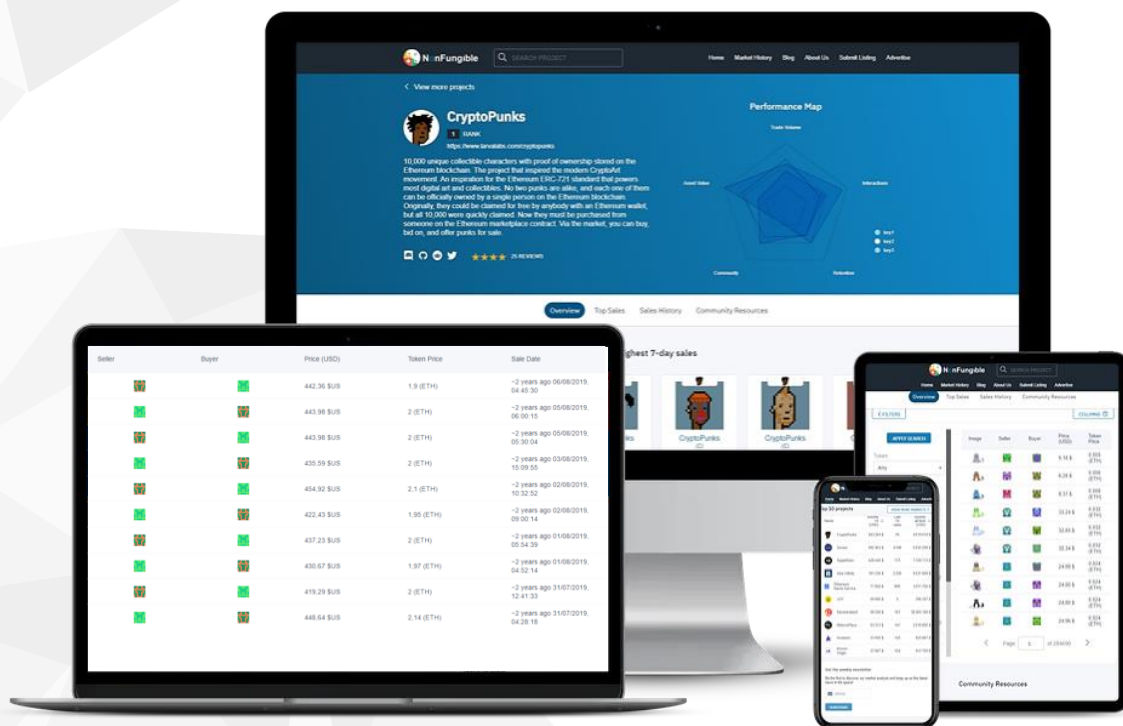
Go beyond public market volumes and identify healthy and promising projects in which to invest.

Don't be fooled by Market Manipulation

Explore the NFT Markets with confidence with NonFungible.com real time market history.

Learn how to spot Market manipulation and buy your NFTs at the right price.

Whether you are a Gamer, Collector or Private Investor, make educated purchases with advanced market knowledge.



1 **NFT BUYER** CHECKLIST



WHAT TO CHECK BEFORE BUYING AN NFT?

There are numerous NFT projects, dozens of new promising ones popping up everyday. But sometimes, because of misleading marketing campaigns or inflated market volumes, it may be complicated to truly identify what is a promising project and what is not.

You have probably read on a lot of related websites that you should “DYOR” or “Do Your Own Research” before purchasing any asset, but where to start and what is the right criteria? This section is intended to help you drive forward your own due diligence before investing into any NFT project or purchasing an asset. As the NFT ecosystem is already extremely broad, from Art to Gaming and Metaverses, the due diligence process is necessarily different depending on the particular asset type.

We have organized this Checklist based on the main segments of the NFT industry:

- Games
- Art
- Collectibles
- Metaverse
- Utility
- Sports

However, it should be kept in mind that “categorizing” an NFT project is not so easy and that in some cases it’s necessary to observe more carefully the types of asset for sale beyond the segment themselves. If we take the example of the Metaverse Decentraland, a large number of different assets are on sale within this project: LAND, NAMES for your Avatar and WEARABLES to dress your Avatar and give it individual style.

The following pages are intended to help you in your own research process and to help you build your own Due Diligence framework. But we urge caution, this report is not intended to be exhaustive and ultimately all these topics will need to be supplemented by your own critical thinking.

This checklist was developed on the basis of our personal experience (over 15 years accumulated between the different team members) and on the basis of the Due Diligence Process of certain Whales & NFT Investors.



BASIC CHECKLIST AND QUESTIONS

Below are some of the questions to consider before marking any purchase, regardless of the type of asset:

Is the project / Smart contract verified?



On the blockchain, everything is traceable and verifiable, so it's theoretically impossible to buy a counterfeit. You still have to be careful to make sure you are purchasing assets that were created by the original Smart Contract. This can be verified very easily on some Marketplaces (like OpenSea) with their verification badges.



Who is the Team behind the project?



It's always good to know who is behind the initiative, are these blockchain veterans, renowned artists or strangers who are trying to pass themselves off as stars? Take the time to explore the "About Us" or "The Team" section and do some research on the founders ... It doesn't take a lot of time and sometimes it helps you avoid terrible scams.

What makes the asset valuable?



This question is far from trivial and the answer depends on each use and each context. Does the object offer real use value within a project and is this value likely to be increased or decreased over time?

Is the project truly decentralized?



Without becoming overly technical, it's important to understand how much your assets "really" belong to you. Does a publisher have the ability to suspend your account or access the content of your wallet? Are the assets of the NFT, its asset and image, video, etc. secured by a 100% decentralized blockchain?

Is there a true scarcity?



How does the project / artist ensure the scarcity of assets? Is there a risk that your ultra exclusive 1/1 edition will be supplemented by hundreds of other comparable assets in the future?



COLLECTIBLES



Collectibles can have several uses but are often associated with video games and more recently, DeFi.

In the context of video games, the most common gameplay is to “breed” two collectibles to be able to produce a third NFT that can be more or less rare. In DeFi, the use differs a little because the collectibles will be used most of the time to be stacked in order to produce fungible tokens or not.

For collectors, here are some questions to ask yourself:

- What is the scarcity of each collectible?
- How will it be used?
- How is the tokenomics built?
- How will / can we expect the NFT to evolve within the project?
- How to withdraw the collectibles?

For traders / investors:

- How is the tokenomics built?
- Is the team already known in the DeFi space?
- How fast are the new collections being launched?
- How much should I put in and how long before ROI?

There can be many reasons to collect assets but in the context of NFTs, Collectibles often have a different uses than just as a simple collectible.

It is for this reason that it's important to check at what stage of the roadmap the project is at, whether it is relevant to buy an old collector's item that could still provide interesting bonuses or whether on the contrary, a V2 is in progress and it would be better to wait to become profitable.

Credit: Meebit #10761 “Dissected” – Sold for \$2.6M / 700 WETH on 05.13.2021



ART



Art is by far the least obvious category to evaluate objectively.

The rating of an artist depends on several factors such as their reputation, the Marketplace on which their works are available but especially your own emotion towards their art.

For art collectors, here are some questions to ask yourself before moving on to the purchase:

- What is the reputation of the artist?
- What is the maximum amount you are willing to invest?
- Is it for the collection only or does this purchase have a purpose?
- Is the artist really who he claims to be?
- Does the same work exist elsewhere?
- Is the image stored in a decentralized way?

For traders or investors:

- Do you agree to be publicly recognized?
- How to exhibit the work?
- How can I contact the artist?
- Is the artist really who he claims to be?
- Does the same work exist elsewhere?

The acquisition of a work of art is a delicate choice where many codes need to be known before moving on to purchase. This is not an investment to be taken lightly unless, for example, the goal is only to encourage an artist you like.

If you intend to have a commercial use of the Art NFT you bought, remember to ask the artist for written confirmation that you can for example, make t-shirts or posters.

Credit: "Hope" by XCOPY – Sold for \$459,246 on 03.22.2021



VIDEO GAMES



Each NFT within a video game has to be considered in the context of the game experience. Each game type having its own mechanism, built-in economics, trends and so on..

For players, here are some questions to ask yourself before proceeding to the purchase:

- What is its use in the game?
- Is it possible to obtain it other than by buying it?
- What is its level of rarity?
- How are the loot boxes randomness generated?

For traders or investors:

- What is its use in the game?
- What is its lifespan?
- Can its use be replaced by another NFT more or less rare?
- How long will I keep it?

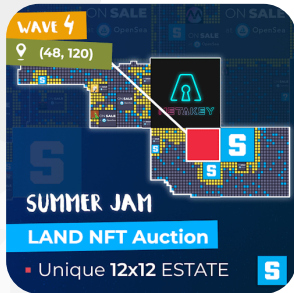
By asking yourself these questions (the lists are of course not exhaustive), you will have an overall estimate of the usefulness and rarity of the NFT you want to acquire. Normally, how the game will evolve is announced on the roadmap or whitepaper.

This will allow you to conduct research yourself or ask questions directly to the game's team of developers before proceeding to purchase.

Credit: "Formula 1 - 70th Anniversary Edition" – Sold for \$585,626 on 05.31.2021



METAVERSES



There are two main uses of NFTs in the Metaverse ecosystem.

- The first is about the ownership of virtual lands (Land or Estate)
- The second is about owning the assets that compose this virtual world (wearables, in-world assets, avatars...)

We'll explore the first use case here, the second one is addressed in the Collectible page.

For builders, here are some of the key questions:

- What is the usable area of the land, length, width, height?
- Is the location suitable for my use?
- With which other project is this land compatible?
- Are the creative tools technically accessible?

For traders or investors:

- Where is the NFT located on the map?
- What is its lifespan?
- Can its use be replaced by another NFT more or less rare?
- How long will I keep it?

Location is the key indicator of any terrain present in the metaverses. **Whether it is to build, rent a site or simply bet on an area that will gain in value in the long term.**

Credit: 12x12 Estate L (144 LANDS) located at (48, 120) in The Sandbox NFT Metaverse – Sold for \$279,397 on 07.16.2021



SPORTS



The sports sector is developing more and more thanks to NFTs. Whether using the image of personalities or the designs of known racetracks, this category develops projects mainly in the field of Collectibles or Video Games.

For players:

- In which field of sport am I most specialized?
- What are my betting limits?
- What are the exact characteristics of the NFT?
- What is its level of rarity?
- Does the project development team have any formal partnerships?

For traders or investors:

- Does the project development team have formal partnerships?
- What's in the Sporting news, player injuries, world events etc?
- How long will I keep it?
- What are my betting limits?

Since 2018, the sports industry has fast become interested in NFTs in developing their collectible projects. Aimed above all at fans of already existing sport sectors, having expertise in the field where you want to invest or trade will be necessary.

For example, for NBA Top Shot its important to take into account the history of the player you are purchasing as well as their future prospects in addition to the number of card editions published to determine the NFTs value. Regarding the video game aspect, the NFT will take a central place in the gameplay. As its usefulness and value will vary depending on the type of game played, it is all the more important to have an affinity with the sport and / or the chosen gameplay.

With Sorare for example, in addition to the number of map editions published per player, the external indicator that will vary the value and characteristics of a card will be that of the performance of players in the real world.

Credit: Antoine Griezmann 2020-21 – Unique – Sold for \$114,916 on 06.20.2021



UTILITY

The logo for punk.eth, featuring the text "punk.eth" in white on a magenta rounded square background.

punk.eth

The utility sector is **a bit special** in terms of "Due Diligence". Indeed, each NFT of this category has a rather limited utility in terms of use, so the checks are quite quick to carry out.

For users:

- What are the limits of its use?
- Is there unlockable content (e.g. as part of a concert ticket)?
- How scarce or exclusive is the NFT?

For traders or investors:

- What are the limits of its use?
- Is there unlockable content (e.g. as part of a concert ticket)?
- Is NFT rare (has fewer letters for a domain name or a ticket granting more profit?)

The questions are relatively the same for simple reasons. For example, in the context of domain names, their use is very personal. Whether you're a brand or a trader, having as few letters as possible in your field is always an advantage. If it is to be resold, the possibilities with as few letters as possible are necessarily rarer.

The most probable risk related to domain names is the "squatting", meaning that the owner of the domain names isn't who he claims to be. For example, amazon.eth and google.eth hasn't been bought by Amazon or Google.

For concert tickets, it is important to find out when the event will take place and how to know if the ticket has already been used or not.

Credit: "Punk.eth" ENS domain name sold for \$60,099 on 07.15.2021



2 **WASH TRADING** PATTERNS



IS THERE WASHTRADING IN NFT MARKETS?

Our research methodology

As mentioned earlier, the objective of our work in this report is to help everyone gain autonomy in their analysis of the NFT Markets, with the right tools and the necessary knowledge.

Before going into further detail in this section, we must return to the assumption which is at the origin of our research work: "There is Wash Trading in the NFT Market".

In order to validate this hypothesis and to succeed in quantifying Wash Trading, it is first necessary to identify in what form this Wash Trading takes place, how to recognize it and what reasonable doubts lead us to consider this or that transaction is an illegitimate one.

The NonFungible analyst team began to identify the Wash Trading phenomena in the NFT Markets as early as 2018, this was observed on a Marketplace where more than half the trading volume was generated by a handful of Ethereum Wallets trading the same assets over and over. It was obvious on these kind of grounds that it was not human activity.

Today, the motives for Wash Trading have evolved with the development of the ecosystem. This section brings together all of the Wash Trading patterns that the NonFungible team have managed to identify. Please note, this list is not intended to be exhaustive, but already provides an overview of the Market manipulation practices that can be observed in NFT Markets to date.

The main search criteria that identified these reasons are as follows:

- Abnormal activity of a wallet with a project: transaction volume, USD volume both well above the average.
- Abnormal activity between wallets: repeated or identical transactions between a series of wallets, with recurring patterns.
- Abnormal activity around an asset: asset with too much liquidity out of step with the rest of the market for this type of asset.
- Recurring patterns on the dates and times of transactions, patterns observable around the trading of certain Asset IDs, for example: Collectibles #100 to #110 being traded in the same way, the same number of times, during the same period of time.



HOW TO READ THIS SECTION?



Each asset is represented by a fingerprint. If several assets are involved in the Market manipulation pattern, each asset will have a distinct color code. The same asset will always be represented with the same color code.



Each Ethereum wallet address is represented by a colored person. Each Ethereum wallet address will have a distinct color code. The same Ethereum wallet address will always be represented with the same color code.



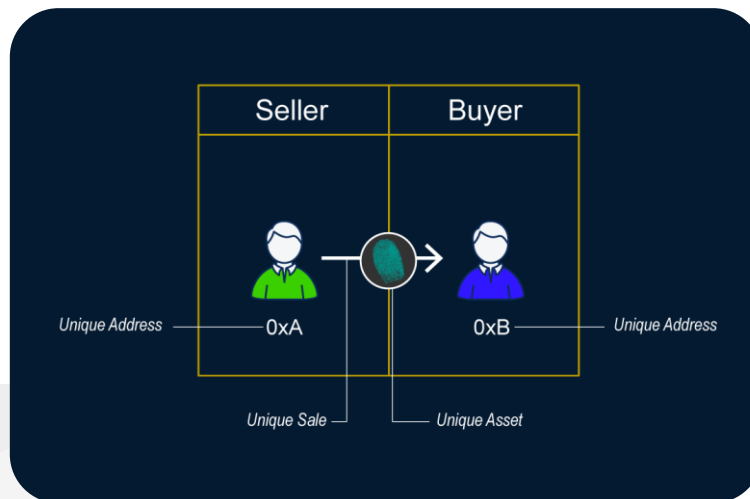
White arrows represent Sales. They point from the Seller to the Buyer



Pink arrows represent Transfers. They point from the original wallet to the destination wallet



All dates & wallet addresses are fictive.



BASIC PATTERNS

Wash Trading can take a variety of forms, from the simplest motives to much more advanced mechanisms that involve a large number of players.

This first section is dedicated to Basic Patterns, in other words to the simplest and most easily identifiable patterns of Wash Trading.

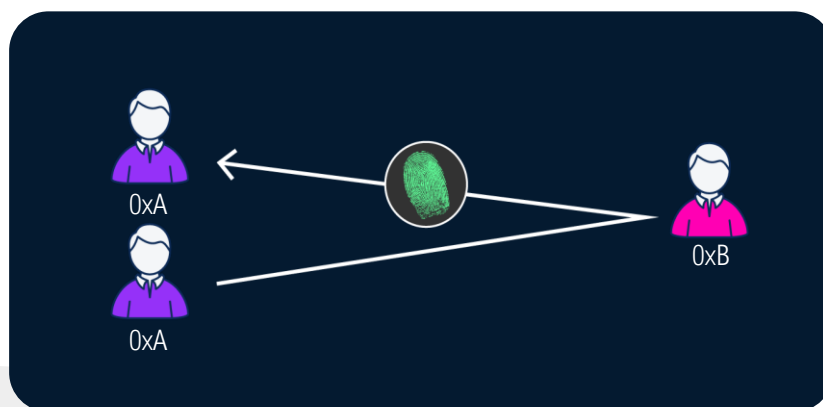
The second section will be dedicated to more complex patterns, the identification of which requires time and some expertise.

For easy identification, we have “named” each of the motifs.

« Wash Trading 101 »

0xA sold an asset to 0xB. The same asset is then shortly resold to 0xA.

This operation can be done several times between the two same addresses. In some cases the asset is traded dozens or hundreds of times between the same two wallets.



This is the simplest and most classic Wash Trading scheme.





















The buyer and seller exchange the same asset with each other on a loop.

Some features can spark off:

- Abnormally high asset prices
- Precise interval between each sale (every 2 hours for example)

The price usually stays the same over the course of different transactions, or it may go down slightly, so that gas costs are factored into the equation.

This type of pattern is very easily identifiable on the asset detail page on NonFungible.com, cf. screenshot on next page:

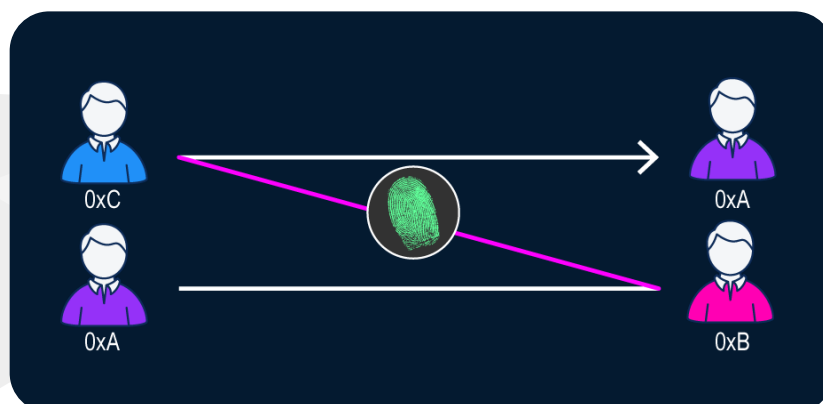
Seller	Buyer	Price (USD)	Token Price	Sale Date
		442,36 \$US	1,9 (ETH)	~2 years ago 06/08/2019, 04:45:30
		443,98 \$US	2 (ETH)	~2 years ago 05/08/2019, 06:00:15
		443,98 \$US	2 (ETH)	~2 years ago 05/08/2019, 05:30:04
		435,59 \$US	2 (ETH)	~2 years ago 03/08/2019, 15:09:55
		454,92 \$US	2,1 (ETH)	~2 years ago 02/08/2019, 10:32:52
		422,43 \$US	1,95 (ETH)	~2 years ago 02/08/2019, 09:00:14
		437,23 \$US	2 (ETH)	~2 years ago 01/08/2019, 05:54:39
		430,67 \$US	1,97 (ETH)	~2 years ago 01/08/2019, 04:52:14
		419,29 \$US	2 (ETH)	~2 years ago 31/07/2019, 12:41:33
		448,64 \$US	2,14 (ETH)	~2 years ago 31/07/2019, 04:28:18

Example of an asset wash traded in one week between late July and early August 2019.

We observe that the Seller and the Buyer are strictly the same throughout this process, and that the price gradually decreases over time, from 2.14 Eth to 1.9 Eth.
This asset was traded 10 times in the space of a week, at a relatively irregular pace.

« First seller buys it back »

0xA sold an asset to 0xB. 0xB transfer the asset for free to 0xC. 0xC sells back this asset to 0xA.

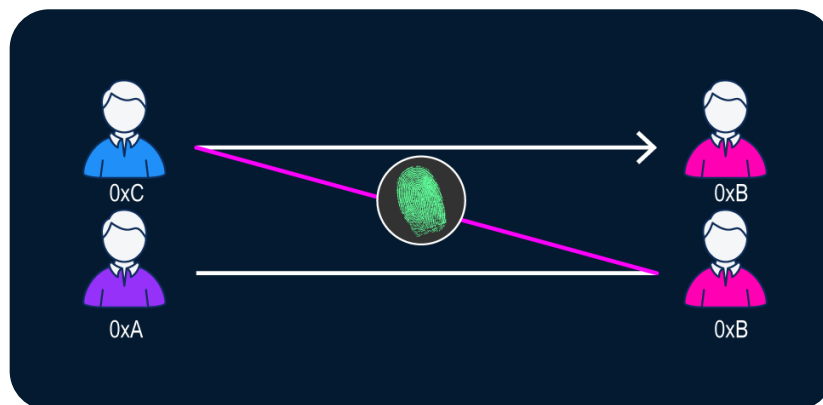


This pattern presents a variant of the classic “Wash Trading 101” pattern: in this scheme, the asset is given for free to a third address and then re-sold to the first seller. That can be seen as an attempt to hide the Wash Trading pattern.

This scheme can be done over the course of several days.

« First buyer buys it back »

0xA sold an asset to 0xB. 0xB gave this asset to 0xC. 0xC sold this asset to 0xB

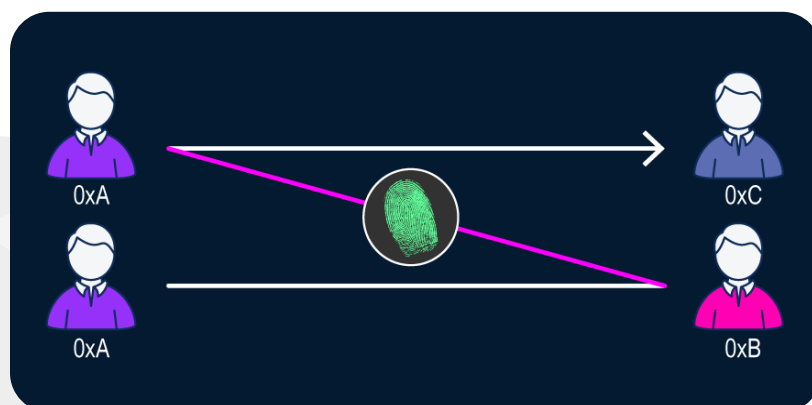


Variant of “First seller gets it back”, after acquiring the asset from buyer A, address B transfers the asset to wallet C. Some time later, wallet C resells the asset to wallet B.

This pattern is generally observed several times with the same wallets. Here again, transactions can take several days or even weeks in some cases.

« Best-selling creator »

0xA sold an asset to 0xB. 0xB transfer back the asset to 0xA for free. 0xA sold the asset once more to a third wallet: 0xC.

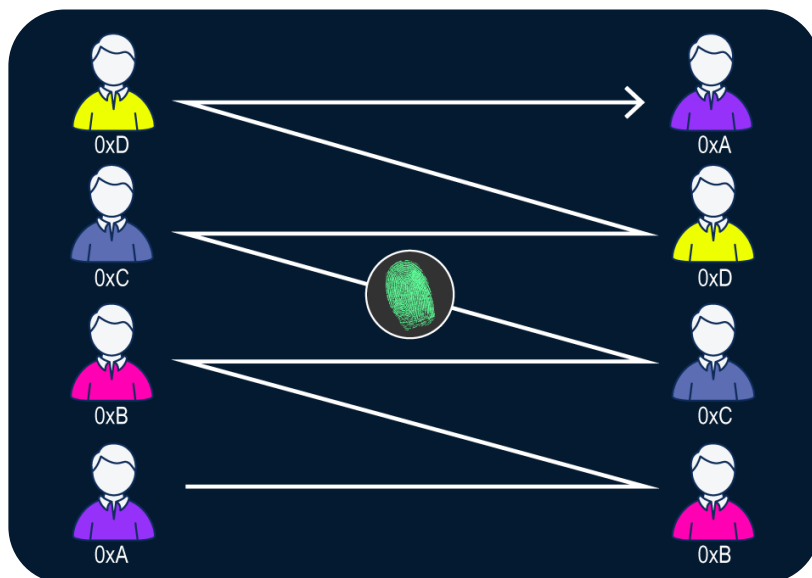


This pattern is unique in that it artificially inflates a creator's sales volume, which can be seen as selling each asset twice.

Here again we find the intermediate stage of the free transfer between wallets B and A, which tends to prove that for this reason it is important that sales are made by wallet A and no other.

« The tornado »

0xA sold an asset to 0xB. The asset is then sold between different wallets and is finally bought back by 0xA after several sales.



This form is more complex than the pattern #1 as more addresses are involved, but the result is the same in the end with the first seller being also the last buyer.

This is the first method which involves a large number of wallets. These transactions cannot be considered legitimate as long as it is not an isolated phenomenon. The same wallets (A, B, C, D...) are generally found in other patterns comparable to this one.

This pattern presents a very interesting opportunity to identify addresses that are involved in Wash Trading activities.

ADVANCED PATTERNS

There are many ways and reasons to manipulate a Market. To artificially inflate a market is one of them, but to fully understand the most advanced Wash Trading patterns, you need to take into account the Global Market mechanisms and understand the deeper motivations behind Wash Trading.

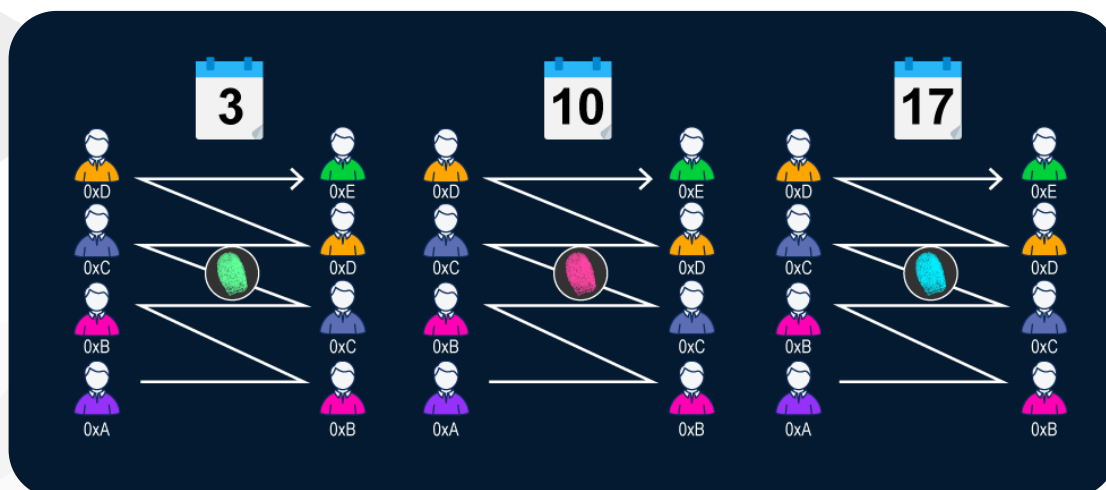
In some cases, Marketplaces incentivize trading through regular rewards distributed as tokens to the traders. In that case, the more you trade, the more rewards you get...On a Marketplace where we've identified the following patterns, the reward is distributed on the same day each week.

Despite the diversity of schemes, there are some common points in the different patterns: most addresses have very little (1 or 2 trades) or no interactions with non-suspicious addresses and are always active during the same weekday.

« The day before payday »

0xA, 0xB, 0xC, 0xD and 0xE sold an asset on a weekly basis the day before the reward distribution day.

As this pattern is reproduced several times over several weeks. with the same addresses involved, this is another signal of suspicious market activity.

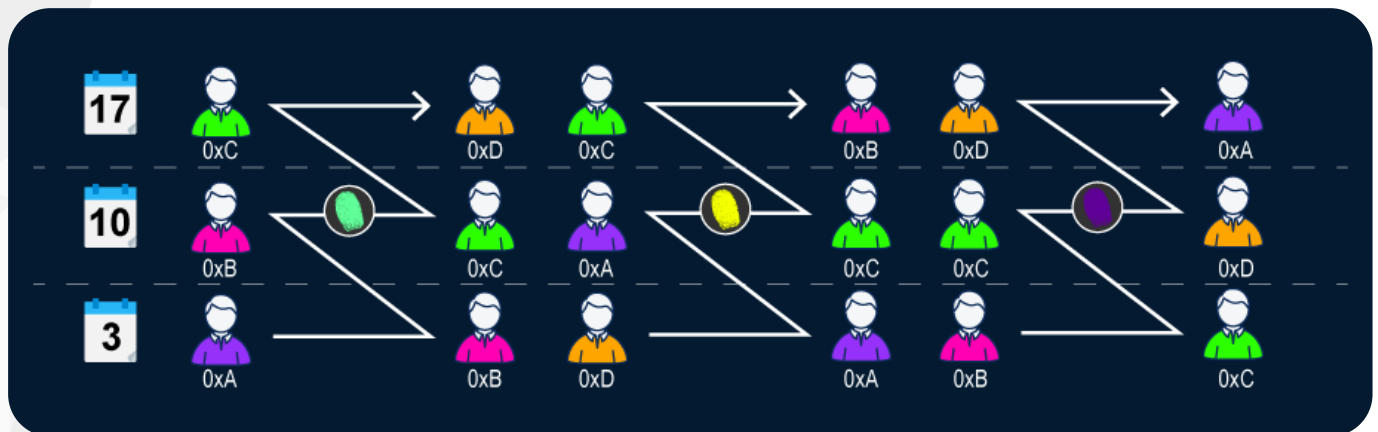


It is important to understand why this pattern is mostly identified on a specific date. The reward on this marketplace is distributed between all traders, based on their trading volume over the past week. At the end of the week, just before the distribution of rewards, the wash traders can then artificially generate the volume required to recover a significant portion of the reward.

This is the reason why the same wallets are active only one day a week and trade the same asset with each other. This operation is repeated several times in the month.

“Three sales scheme”

Each week, the same day or in a very short period of time (<24h), the same group wallets trade a series of assets with subsequent Asset IDs. The same wallets trade assets from the same series on the same day, every week.

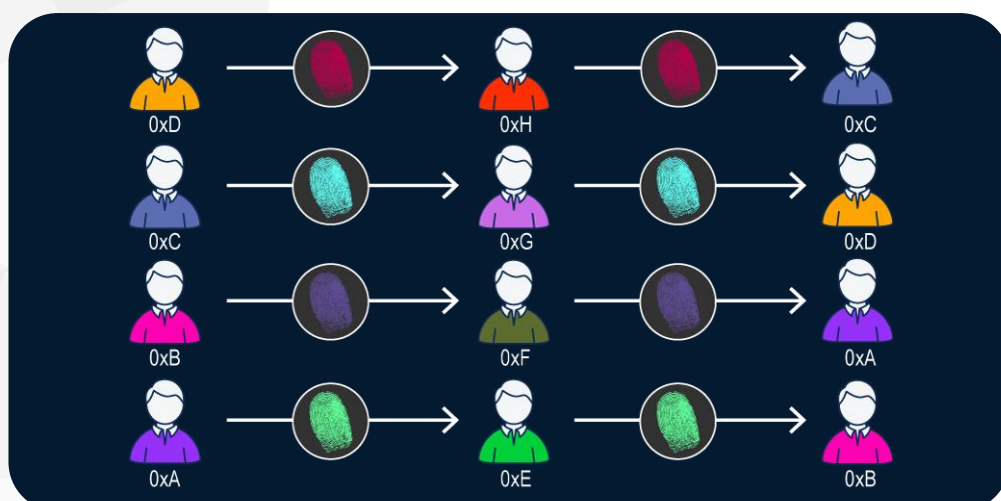


In this pattern, fewer addresses are involved but are active on the same day, with very little activity outside of these patterns. It can be considered as a variant of the "the day before payday" scheme but with less wallets but more assets involved in the pattern.

The pattern involves few wallets that trade a series of assets (e.g.: artworks #200, #201, #202... to #209) in random orders. This pattern is complex to track as many assets are traded between several wallets during several weeks.

The frequency of sales, the closed group of wallets trading with each other, and the subsequent IDs of the assets are many signals highlighting that these trades are not regular trades.

“Supporting Community”



The same day, 0xA, 0xB, 0xC, 0xD bought back their assets from their first buyers in a different order.

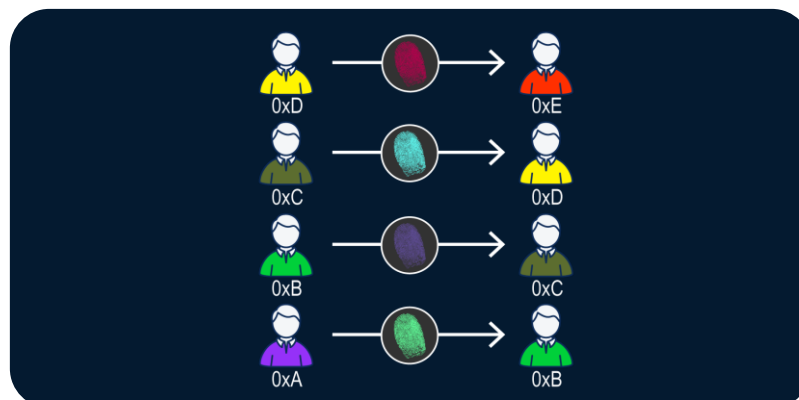
In this scheme, more addresses are involved but there are fewer sales on the affected assets.

The first sale takes place over the same week and the second sale takes place on the same day or less than 24 hours apart. The first buyer serves as intermediary to sell the asset to one of the first sellers.

Looking at the transaction history of suspicious addresses, they have interacted only with the same addresses.

“Disposable wallets”

Over a short period of time with subsequent asset IDs, an address bought an asset and is the first seller of the next asset.



In the scheme above, for example, 0xA sells Asset #212 to 0xB. 0xB sells Asset #213 to 0xC. 0xC sells Asset #214 to 0xD..

In this scheme, within the same 24 hours, a wallet is created to buy and sell a different asset to another active address a maximum of 3 times. These wallets are then abandoned and don't trade any longer afterwards.

In addition to the unique activity of these address, the asset is traded only once and its price is much higher than the average selling price of artworks on the marketplace.

ADDITIONAL THOUGHTS

What we have presented here are the recurring patterns of Wash Trading that our team has managed to identify in the Markets.

It is important to remember that this list is not intended to be exhaustive and that there are undoubtedly other more complex, more elaborate reasons that our team continues to work on.

Although some of the more complex patterns may sound like coincidences in some cases. However, their regularity, subsequent Asset IDs or the fact that these wallets are ONLY active in Wash Trading patterns raises the doubt that this is a coincidence.

Let's also remember that these are Wallets, and not necessarily humans. In other words, behind an advanced pattern, including a dozen wallets, it is quite possible that in practice it is only one and the same person. Thus, even if we are able today to quantify the share of Wash Trading on certain platforms thanks to the identification of certain recurring patterns, it is impossible to date to determine the income generated by Wash Traders behind their screens.



3 WASH TRADING VOLUME



WHAT IS THE WEIGHT OF MARKET MANIPULATION?

In order to confidently navigate the NFT Markets, we should be vigilant about the elements that Market manipulation can represent in certain segments.

In this section, we have chosen to share some discoveries which we have made regarding major cases of Market manipulation within a few projects.

The NonFungible.com team spent weeks analyzing in detail the markets of two NFT projects on which there were suspicions of Wash Trading.

The objective of this section is to illustrate how Wash Trading can impact a market and distort indicators for both investors and buyers.

Remember here again, that Wash Trading is necessarily done on purpose. Manipulating a market involves generating a large volume of transactions, which incurs costs that can be very expensive (specifically on a blockchain like Ethereum).

Two projects have been analyzed here, coming from two distinct segments:

1 Collectibles

1 Art Marketplaces



Please note: we must keep in mind that these are only isolated cases and that, reading our analyzes, the NFT Market as a whole is driven by organic and healthy growth.



ART MARKETPLACE

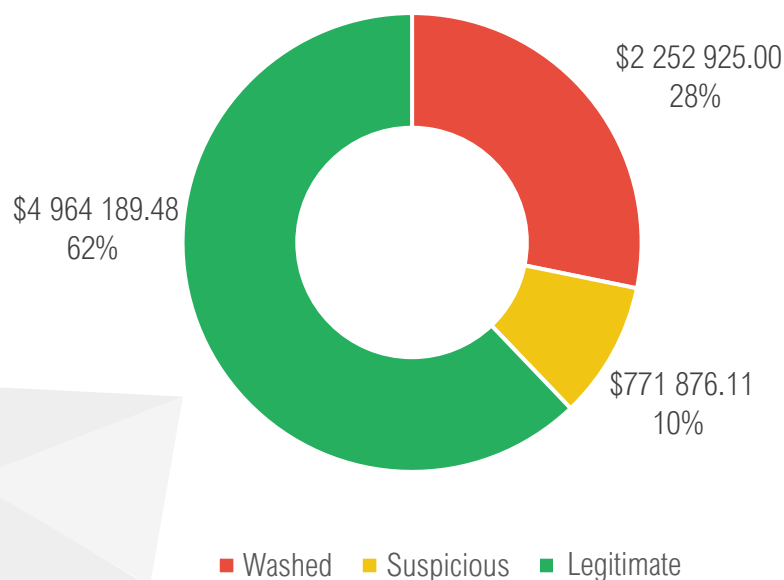
The Wash Trading patterns described in the previous sections have been identified on this particular Art Marketplace.

These different reasons made it possible to distribute all the transactions between trades:

- Legitimate
- Suspicious
- Wash traded

We have followed three distinct indicators to measure the impact of Wash Trading on the Market of this Art Marketplace:

- USD traded volume
- Sales volume
- Volume of assets that have been involved in Wash Trading



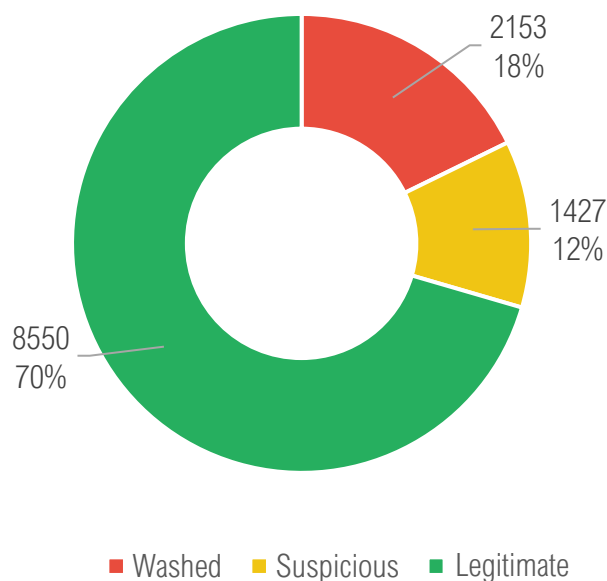
Distribution of USD Volume between legitimate, suspicious trades and wash trading on a single marketplace (May 2020 to Feb 2021).

Almost 30% of the volume of dollars traded on the Marketplace was identified as Wash Traded, for 10% of suspicious trades and around 60% of likely legitimate trades.

This particularly high rate is a reflection of a Marketplace whose volume is largely manipulated.

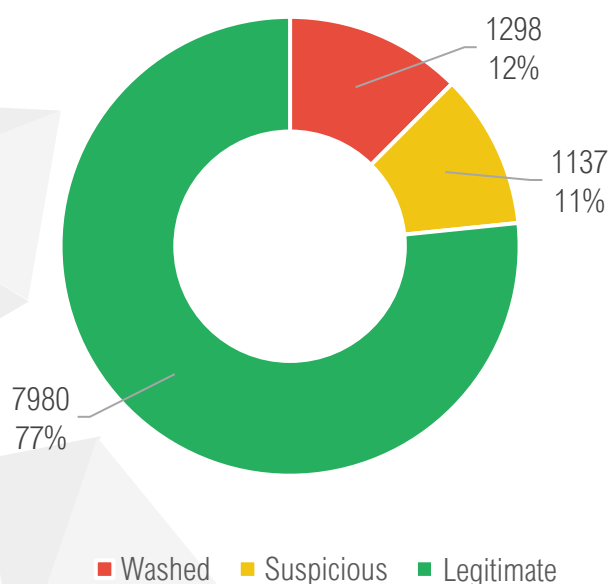


From a sales perspective, the Wash Trade rate is lower, at just under 20% for 70% of legitimate trades. The first conclusion that can be drawn is that the price of traded Washed assets is on average higher than the price of legitimate transactions.



Distribution of Sales volume between legit, suspicious trades and wash trading on a single marketplace (May 2020 to Feb 2021).

The volume of assets that have been involved in Wash Trading is even smaller, with only 12% of all supply associated with Wash Trading. We can conclude here that the players in Wash Trading focus on a relatively small number of assets, to generate a very large Market volume. Another assumption is that the Wash Traded assets have been created specifically for this very purpose.



Distribution of Sales volume between legit, suspicious trades and wash trading on a single marketplace (May 2020 to Feb 2021).



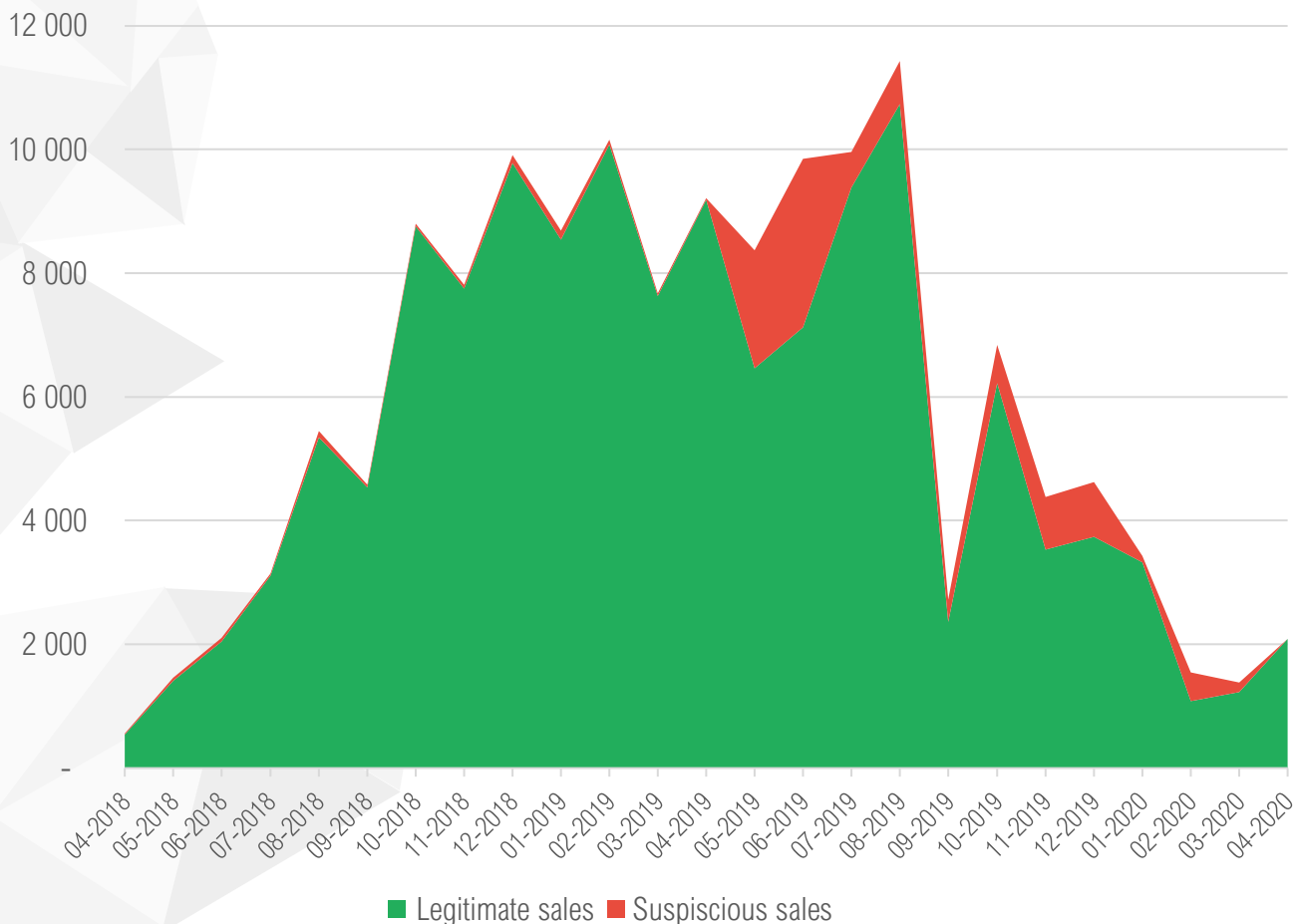
COLLECTIBLES

With regards to the Collectibles project analyzed below, it should be noted that the market was studied over a period of 2 years, from April 2018 to April 2020, which presented the peak of Wash Trading activity on this particular project.



As part of this project, the standards that made it possible for us to distinguish legitimate sales from those Wash Traded has been the number of sales of the same asset in the same month.

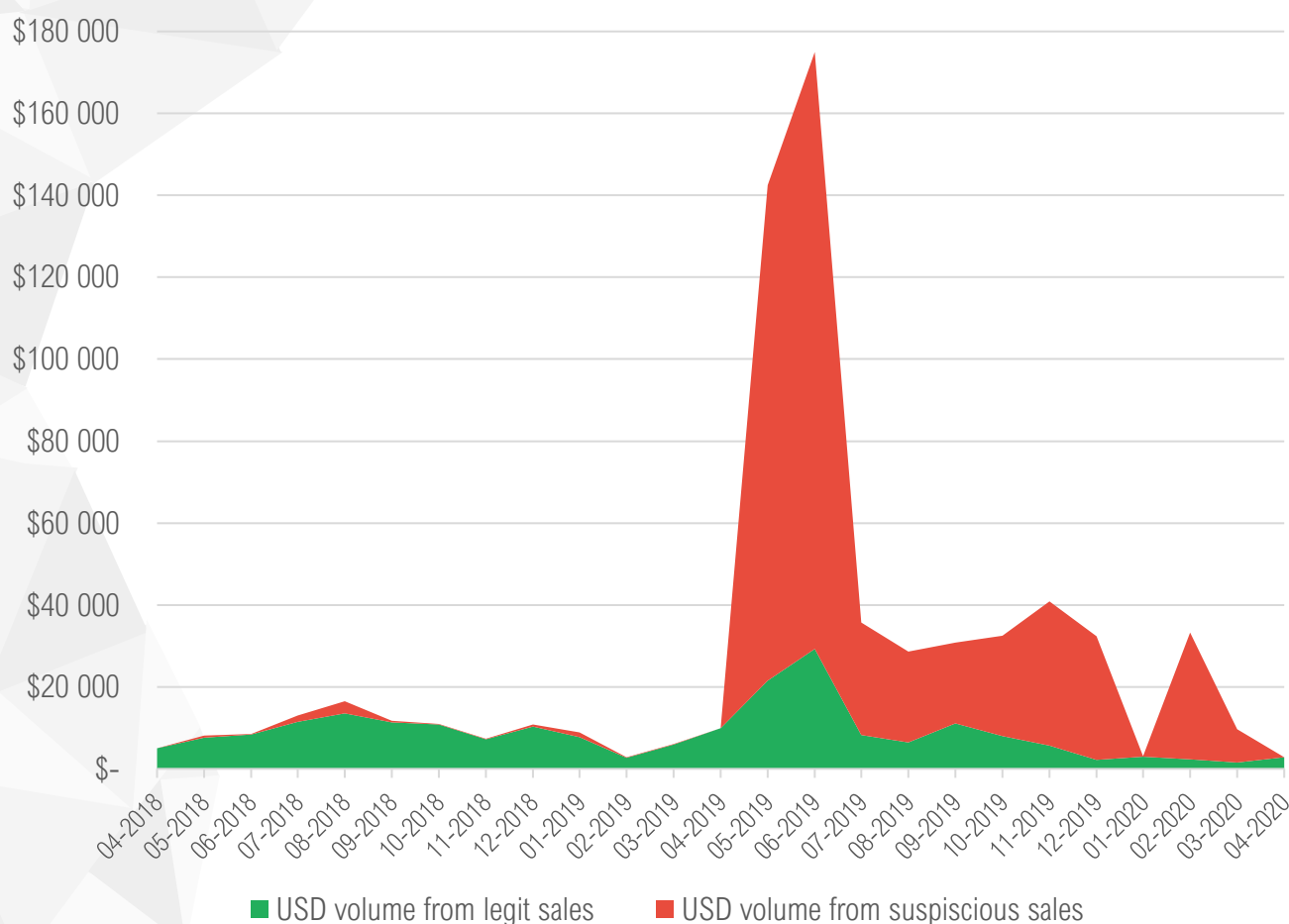
It has been identified that on most collectible projects, an asset is typically traded up to two to three times in the same month. Thus any asset being traded at least four times during the same month is considered as potentially a Wash Trade.



*Distribution of Legitimate & Wash Traded sales on a Collectible project over time
(April 2018 – April 2020)*

If we observe the distribution between “legitimate” sales and suspicious sales, the rate seems acceptable, although relatively high over the period from May to July 2019.





*Distribution of USD Volume between Legitimate & Wash Traded sales on a Collectible project over time
(April 2018 – April 2020)*

The problem becomes glaringly obvious when looking at the growth of the volume of USD traded between legitimate sales and suspected sales of Wash Trading.

We notice a first phase which could be tests or false positives during 2018, the bulk of the activity being particularly visible between April 2019 and April 2020.

If we compare with the previous graph, we notice that the method has evolved over time. Suspicious sales seemed to have completely disappeared in 2020 in terms of sales volume (see previous chart), but we can see that this is not the case in terms of USD traded volumes.

This means that fewer, but more valuable assets were being Wash Traded in the first quarter of 2020.



Some numbers to consider

68



ASSETS WASH TRADED MORE THAN 30 TIMES PER MONTH

625



MAXIMUM VOLUME OF MONTHLY TRADES FOR A SINGLE ASSET

\$1.80



AVERAGE PRICE OF NON WASH TRADED ASSETS

\$46.43



AVERAGE PRICE OF WASH TRADED ASSETS

25.8X



AVERAGE PRICE DIFFERENCE BETWEEN WASH TRADED AND NON-WASH TRADED ASSETS

How many time the asset has been traded per month?	How many assets?	Percentage of the total sales
1	103,648	86.96%
2	13,279	11.14%
3	1,633	1.37%
4	325	0.27%
5	89	0.07%
6	34	0.03%
7	27	0.02%
8	17	0.01%
9	14	0.01%
10	12	0.01%
> 10	113	0.09%

Regular
Trades

Wash
traded
assets

Assets & Sales distribution based on Trades per month



4 GLOBAL CONCLUSIONS



DOES THE NFT ECOSYSTEM NEED REGULATION?

Is it really surprising to identify Market manipulation on NFT Markets?

A Market in full development and underpinned by such economic issues is likely to attract speculation and market bad behavior. This is obviously not something that we encourage, but it is necessary to note that it was largely predictable.

What has been identified here is a snapshot of bad practices and attempts at Market Manipulation. The actors practicing these methods may have different motivations but the greater the lure of profit, the more the techniques will be developed and thought out

The question of regulation therefore arises to prevent these practices but the decentralized nature of a public blockchain makes it impossible to actually regulate these behaviors.

Rather than thinking that it is possible to achieve a risk 0 for this type of practice, a more pragmatic and sector-specific policy should be adopted.

NonFungible.com has always been keen to provide all the tools for making educated purchases. To this end, we have set up "Asset detail pages" which make it possible to make public the sales history of any asset.








Whistleblowing, raising awareness, and encouraging each stakeholder to “DYOR” (Do Your Own Research) is the best way to empower the ecosystem.

Although the more advanced Wash Trading patterns remain difficult to perceive, an asset whose price has been artificially inflated through Wash Trading can be identified at a glance.







The following two examples show two assets from a very popular NFT card game. One asset was obviously Wash Traded, the other not.



Asset #1

Seller	Buyer	Price (USD)	Token Price	Sale Date
		515 000,00 \$US	515 000 (DAI)	~4 months ago 11/04/2021, 07:35:53
		515 000,00 \$US	515 000 (DAI)	~4 months ago 11/04/2021, 07:29:54
		515 000,00 \$US	515 000 (DAI)	~4 months ago 11/04/2021, 07:13:08
		515 000,00 \$US	515 000 (DAI)	~4 months ago 11/04/2021, 07:08:51
		515 000,00 \$US	515 000 (DAI)	~4 months ago 11/04/2021, 07:07:29
		514 103,90 \$US	515 000 (DAI)	~4 months ago 11/04/2021, 06:59:28
		514 103,90 \$US	515 000 (DAI)	~4 months ago 11/04/2021, 06:51:11
		514 103,90 \$US	515 000 (DAI)	~4 months ago 11/04/2021, 06:49:15
		514 103,90 \$US	515 000 (DAI)	~4 months ago 11/04/2021, 06:48:57
		514 103,90 \$US	515 000 (DAI)	~4 months ago 11/04/2021, 06:37:03

Asset #2

Seller	Buyer	Price (USD)	Token Price	Sale Date
		20 442,71 \$US	9,738 (ETH)	~4 months ago 03/04/2021, 07:50:37
		37 586,34 \$US	20,5 (ETH)	~4 months ago 20/03/2021, 08:49:13
		13,43 \$US	0,083 (ETH)	~2 years ago 22/11/2019, 05:58:18

It is now within the reach of anyone to conduct their own research, using tools like NonFungible.com.



WHAT IS THE MOTIVATION FOR MARKET MANIPULATION?

Manipulating a market is a long and sometimes complex activity and above all can quickly become a very expensive exercise with the gas costs on the Ethereum blockchain.

Wash Traders must therefore have sufficient motivation to invest the time and money necessary for Market Manipulation.

Our team has identified some of the main reasons that can motivate Wash Traders:

- **Market Making for a trader**

Artificially inflates the price of an asset or asset type (all red assets, or all assets between the X & Z positions on a map) to sell the rest of those assets at a higher price

- **Rate Making for an artist**

Artificially increases the value of these works to sell these works at a higher price.

- **Getting Reward**

On Marketplaces that offer a Reward for each trade, recovering these rewards can be significantly more profitable than the costs generated by the Wash Trading

- **Promote project**

Some projects noticed are being ranked as #1 on NFT Market Data platforms such as NonFungible.com which provide incredible visibility. Thus, presenting massive market volume can be part of a larger communication plan, in order to attract new users and / or investors.



WHAT IS A “SUSPICIOUS” ASSET?

It is important to keep in mind that every asset is legit until proven otherwise.

If there's only a suspicion and not a reproducible pattern, it is important to consider the asset as “suspicious” and not “wash traded”.

Here's the methodology we used in order to identify suspicious assets:

- If at least two identified wash traders are involved in the sale history
- If at least two suspicious wash traders are involved in the sale history

If an asset has been given after being bought, then resold. Therefore, there was a chance that it has been a real giveaway.

A manual verification is mandatory by checking the price of the sales to the average price of sales of the month:

- If too high, check what asset it is (could be a superstar making a super sale). If no history of trading on the platform or involved more than 50% with other wash traders, consider the asset as wash traded.
- If too low or equivalent, consider it as an actual gift resold.

What should you do if you meet a wash traded asset? Does that lower the actual value or potential use of the asset?

Not really. It only means that there is no readable market history around it. The asset keep his intrinsic value (as an artwork or video game asset,...) but you can't rely on its market history nor apparent market value to assess it before selling or buying.



WHAT ARE THE STAKES FOR THE NFT MARKET?

If Market Manipulation and Wash Trading in NFT markets were to continue or even become widespread, the consequences for the industry would be:

- Loss of trust of buyers
- Give the impression that the industry is just a bubble
- Loss of trust of investors and institutional stakeholders
- Arrival of strict regulations on all NFT Marketplaces (central hubs of the NFT industry)

Banning will only shift the problem around.

Buyers, Sellers, Marketplaces, Artists, Project Managers, Investors, Media, we all have a share of responsibility today that can help the industry become more honest and more transparent.

That's why we believe consensus and compromise are the best ways to find a common solution in order to reduce the risk of suspicious behaviors.

We believe in consensus. We believe in the ability of an industry as young, promising and decentralized as NFTs to regulate itself for the good of all of its stakeholders.

NFTs are what we make of them.

It is up to us to build an industry capable of changing the world and revolutionizing uses and economic models.



THANK YOU & STAY SAFE

WE'D LOVE TO HEAR FROM YOU IF YOU HAVE ANY
QUESTION OR FEEDBACK ABOUT THE REPORT



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