Understanding the Hype behind Non-Fungible Tokens (NFTs)

Everyone keeps talking about NFTs. Is the hype justified, or is it one giant speculative bubble? Read on to find out the answer.

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For the uninitiated, a fungible good is mutually interchangeable. A good example is money, where the value of a $100 bill is equivalent to other $100 bills (or even two $50 notes). Although there are minute differences such as serial numbers and issue dates, financial authorities deem them fungible because it simplifies everyday life's transactional processes. Conversely, a non-fungible good is unique and cannot be interchanged; some examples include art pieces, land titles, and birth certificates.

One of the most significant issues with non-fungible goods is their ability to prove authenticity. For instance, if someone were to steal the Mona Lisa and sell a fake copy in the market, it would be tough to confirm it is the original, short of bringing in art experts to determine its legitimacy. This is where NFTs come in.

NFTs take advantage of smart contract technology to store and record their unique information on the blockchain – this means that whenever an NFT is created, only one of it verifiably exists. NFT creators can also encode details such as rich metadata or secure file links. Such technological capabilities have enormous implications on how we treat ownership because it allows the transfer of assets safely, efficiently, and verifiably.

Understanding the Hype

In 2020 alone, NonFungible and L'Atelier BNP Paribas estimate that the total market capitalization for NFTs is $338 million, a stark growth rate representing a Compound Annual Growth Rate (CAGR) of 102% from 2018. Many crypto pundits are touting 2021 as the year of NFTs; however, some worry that this would be a repeat of the 2017 Initial Coin Offering (ICO) craze where overhype of new capital-raising methods led to vast fraud and overinflated assets. Is the hype justified, or is it just one giant speculative bubble?

To answer this, we divide this essay into three separate sections. The first section considers the factors fuelling the hype; the second considers how NFTs are valued; and finally, the last section attempts to contextualize the entire industry based on the findings raised in this article.

A) What is fuelling the hype?

1. Humans are Natural Collectors

One only needs to look at the traditional collectibles like stamps and trading cards to understand that people collect different things for various reasons. An excellent example is collectors in the toys/models industry, which reportedly make up $3.45 billion worth of US retail sales (15% of the entire market capitalization) in 2012. The NPD Group conducted the study, which notably did not include other channels such as auction houses and e-commerce platforms. Imagine if the survey had different industries like online games, books, and artworks – we cannot underestimate the sheer size of the total collectibles market.

The traditional collectibles industry draws a strong resemblance with the NFT industry. NonFungible and L'Atelier BNP Paribas's NFT report categorizes the NFT industry into six areas, including a 'collectibles' section on its own. However, we believe that each segment possesses 'collecting' elements of its own. Whether it is tokenized assets on 'The Sandbox' or 'Aavegotchis,' NFTs will always have collectors, regardless of their use case. Indeed, the literature on the psychology behind 'collecting' suggests that people will collect just about anything and is a widespread phenomenon, even amongst adults.

While sociologists have put forward many theories, the overlapping theme is possessing substantial emotional investment. A Medium article by Everest Ventures Group (EVG) perfectly encapsulates this point on virtual avatar clothes. The digital investment group highlights spending real money on virtual assets took off since the early 2000s when online multiplayer games started becoming popular. Although functional assets exist in some games, which offer a competitive edge, the same reasoning does not apply to cosmetic items that provide no utility beyond player differentiation. Non-blockchain based-games like Fortnite, Dota 2, and Counter-Strike are examples of free-to-play (F2P) games that thrive on revenue generated from 'skins' (virtual fashion wear) and other cosmetic-related effects.

According to EVG, more prolonged periods spent in-game correspond with greater emotional attachment – this applies to all aspects of the game, especially the community. Many players grow attached to their virtual possessions and respective communities. Some even prefer their virtual communities over reality, which makes in-game appearances and good community perception essential.

Although not all NFTs are gaming-based, there are strong parallels that we can draw. No one can deny that despite the disparate and decentralized nature of the crypto community, many of us are proud to be a part of an ever-growing movement. Our heartstrings do get tugged in support of developers, artists, and NFT projects. Others acquire NFTs as a flexing mechanism. In short, playing with NFTs or buying them are often driven by communal reasons.

EVG further reasons that one of the main inhibitors behind the greater adoption of virtual assets is the lack of actual ownership. In the gaming world, developers control the universe, depriving users of crucial properties that real items possess, such as the ability to do whatever you want with your item. If we accept this assertion, NFTs will functionally solve this. Unlike conventional digital assets, NFTs can give holders 'real' ownership - both in the emotional and legal sense. This appears to be further backed by NonFungible and L'Atelier BNP Paribas's survey results on NFT holders, where 68.4% of respondents said they do possess emotional attachment to their NFTs (instead of answering 'No, it's just an investment'). Therefore, NFTs are reliable gateways to new collectibles, which offer stronger emotional value and are bound to attract more consumers.

2. Higher Disposable Income

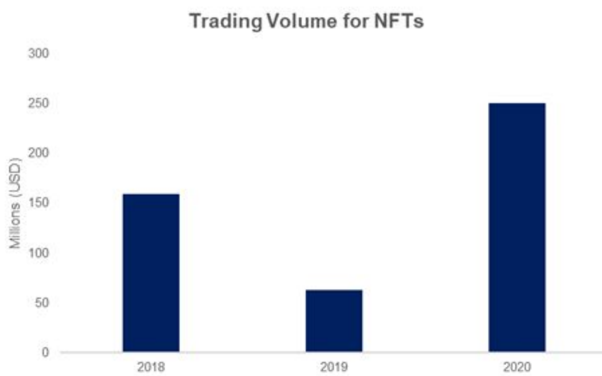
'Collecting' can be traced back to primitive societies where humans collected oddly shaped rocks. Since then, the constitution of a 'collector' has evolved. According to social psychologist Andrew Dillon:

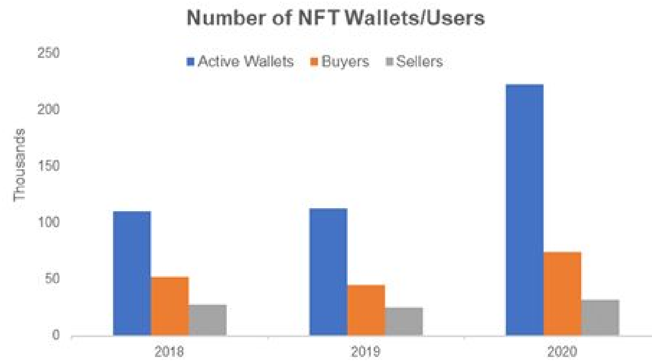
> *'The modern notion of the collector, one who accumulates objects for pleasure, display or perhaps other unconscious motivations than consumption or survival need is tied to the **emergence of disposable wealth**.'*

Dillon's interpretation suggests that wealth begets collecting. Initially, only the wealthy and powerful ruling classes had the financial freedom to pursue their interests. However, as modern society developed, leisure became more attainable amongst the masses, becoming the catalyst for collecting.

If we look at the NFT industry, there are some striking similarities to how the NFT market developed following this thesis. In Andrew Steinwold's history lesson on NFTs, one of the earliest and most successful NFT projects was CryptoKitties. In his own words, 'people were buying, breeding, and trading virtual cats like crazy.' Notably, the success of CryptoKitties coincided with the 2017 bull run. Once the initial hype was over and the crypto markets entered the bear cycle, market sentiment slowed down. NonFungible considered the period after that as the period of consolidation and stabilization. Although there was a surge of new NFT projects, most of them had a low retention rate and ultimately failed.

Fast forward to 2020, and the entire crypto market cap has reached similar levels to the 2017-2018 bull run. At the same time, NFT projects started picking up pace again. Several market indicators show that the growth rate in 2020 is significant.





Source: NonFungible

Currently, most NFTs in the market are centered around collectability and entertainment. Based on past market trends and human psychology, it is reasonable to assume that most NFT spending occurs when there is higher disposable income. In other words, bull markets are periods where the average disposable income is higher, leading to a higher willingness to pay for leisure goods such as NFTs.

3. Profit-making

Yes, NFTs have great use-cases with significant implications on how we treat assets; but let's not pretend that many aren't here to make some money.

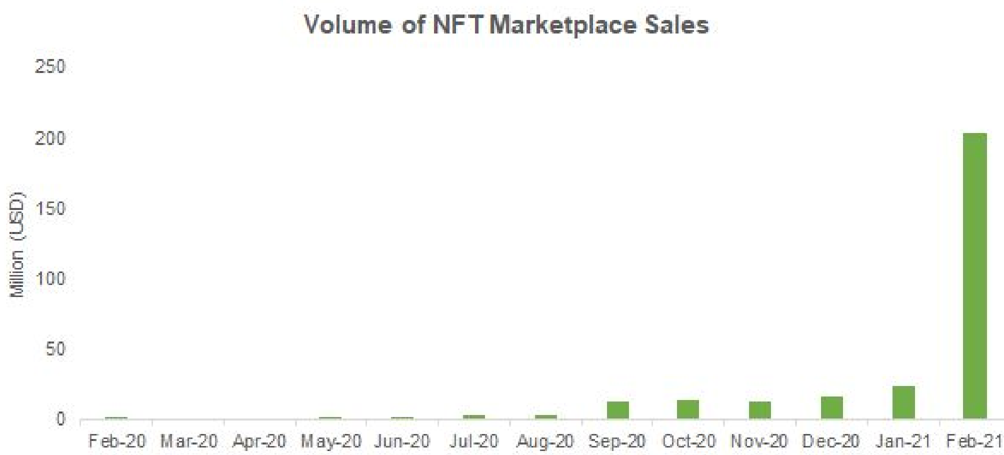
According to Nonfungible, there are several indicators to support this:

1) Sales above $1,000 in the primary market (i.e. first point of purchase) have exceeded the volume of sales in the secondary market (i.e. peer-to-peer sales) in Q4 of 2020. This suggests that NFT traders are buying NFTs upon issuance and reselling them at higher prices.
2) The number of NFT buyers is outstripping sellers. This suggests that more users are buying up NFTs, but it could be for different reasons, such as reselling them for a profit or keeping/using them.
3) The liquidity rates (calculated by dividing the total volume of unique assets traded on the secondary market over the total supply available for each asset) for specific NFT categories are relatively high (e.g., Metaverses and Sports). This suggests that NFT sellers drive significant speculative prices within these spaces.

NFT-trading can provide significant profits, given the right investment. One only needs to look at the media attention (further discussed below) over the last few months. Mainstream figures like Grimes managed to sell $6 million worth of her own NFT art tokens while the 'rarest Pepe

Meme' sold for $320,000. And, of course, the famous Beeple, who just managed to auction off a single NFT art piece for $69 million.

While not every NFT has the same value, NFT traders are bound to be lured in by such eye-watering profits. Another good indicator is the market activity on NFT market platforms



Source: Messari

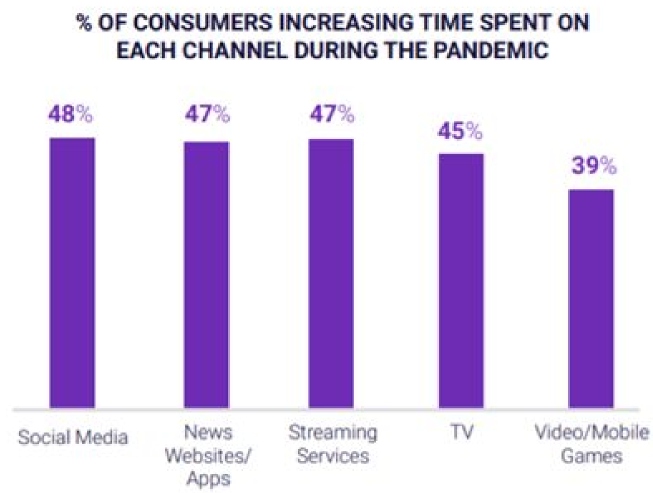
Messari's aggregated sales include both major NFT marketplaces and upcoming ones. In total, 8 of them were accounted for: Opensea, Zora, SuperRare, Rarible, Foundation, MakersPlace, KnownOrigin, and Async Art. Volume was practically non-existent before September 2020 and slowly picked up throughout Q4 of 2020. However, in February 2021, the sales volume exploded, which closed a little over $200 million.

NFT marketplaces are designed purely for trading and serve as reliable indicators for the money-making segment. Even the recent growth of new market platforms are signs of healthy demand for NFT trading.

4. Increased Market Awareness

There is a bit of a chicken and egg dilemma here. Are the collective factors discussed in this article leading the hype? Or is mass media reporting, social commentary, and brand endorsements the main catalysts?

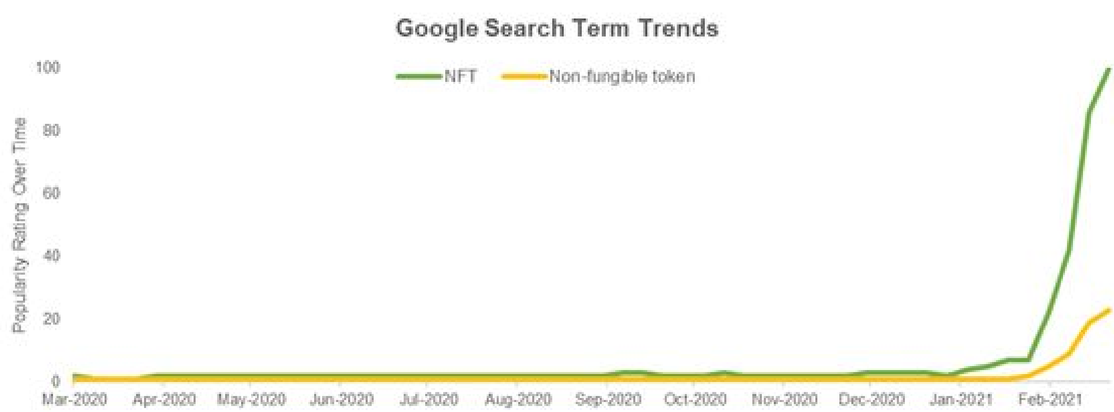
A study conducted by DoubleVerify in September 2020 found that content consumption has peaked during the pandemic. Globally, consumers have more time to fill and a clear need to stay informed. On average, consumers have doubled the amount of time they spend each day consuming content — from 3 hours 17 minutes to an average of 6 hours 59 minutes.



Source: DoubleVerify

Across every content type and channel surveyed, consumption is up, with social media leading the way – this corresponds with Nonfungible's findings on the number of new active NFT wallet holders in 2020 (205,046), which is more than double the amount in 2018 (84,839). However, if you look at Google Trends, a different picture appears.

A simple lookup will show that the search interest levels for both 'NFT' and 'Non-fungible token' have reached their respective all-time-highs towards the end of February 2021. The values represent search interest relative to the highest point on the chart for the period - a value of 100 is the peak popularity for the term, whereas a value of 50 means that the term is half as popular. Impressively, the 'NFT' term peaked with a max value of 100 in the last week of February.



Source: Google Trends

The data suggest that despite the healthy organic growth for NFTs throughout 2020, increased content consumption had a minimal effect on market awareness. The more likely explanation is the surge of mainstream media attention over the last few months. Big-ticket names like NBA Topshot and Christie's have been capturing the headlines as of late, while celebrities like Mark Cuban, Lindsay Lohan, and Grimes continue to drive the narrative. Money-making opportunities and record-high volumes for NFT sales (as discussed above) in February further support this.

Nevertheless, we should not disregard the shifting habits of content consumption as it is likely to have a supplemental effect on the NFT industry.

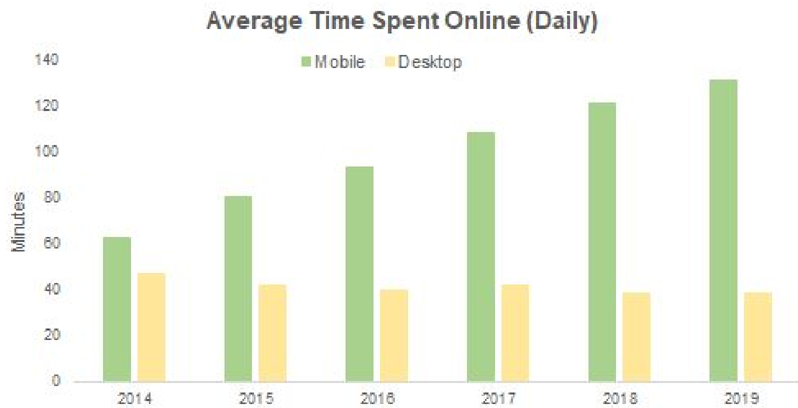
5. The Online World is Taking Over

Perhaps the most overlooked point is the significance of being digital. For crypto enthusiasts, this point is moot because we have grown accustomed to purely operating within the online sphere. On the other hand, for newcomers to the scene, digital characteristics such as online payments may still be entry barriers. There are, however, growing signs that this mindset is changing.

Source: Statista

Consumers have been shifting towards the digital economy for years, further accelerated by the Covid-19 pandemic. From 2014-2020, global retail e-commerce sales have been steadily growing at a CAGR of 17.8%. Forecasts for future sales indicate that future growth is exponential. Findings from KPMG's Global Consumer Report (2017) also suggest that more consumers are willing to buy new product categories online, particularly those more traditionally sold in shops. NFTs are new types of assets that could benefit from wider online acceptance.

Another interesting metric to look at is the daily time spent online.



Source: Statista

In 2019, a person spent an average of 2 hours and 12 mins on their mobile phones and 39 minutes on their desktops. Covid-19 has only accelerated this trend to new heights. Coupled with the increased consumption of online content (based on DoubleVerify's study), there is essentially more time and commitment to the virtual world.

Reiterating EVG's findings, consumers build an emotional attachment to virtual assets and communities the longer they spend time in them. Based on current market trends, this only further supports the value proposition of NFTs.

People are spending more time online as they become keener to explore and transact in new online mediums. NFTs fill this market gap because they are exclusively digital products. Moreover, some NFTs directly compete with traditional goods such as artwork and trading cards. For example, a piece of NFT artwork can be bought, sold, and viewed online within minutes, whereas a physical painting will have to be shipped and limited to household viewing. Uploading a photo online is possible, but there is a considerable difference between owning the asset and posting a picture of the painting on Instagram.

For many, the lines between reality and the virtual world are becoming increasingly blurred. NFTs can bridge the gap and accommodate their societal needs in the digital medium.

B) How are NFTs valued?

Many NFTs have floor prices which the creator initially sets. Others have no base price; instead, they are either solely determined by auction or led by speculative market demand.

The biggest problem is that NFTs have no reliable benchmark. NFT's may be unique or part of a series. Different NFT categories have divergent market forces. It doesn't help either that the industry is still very much in its infancy. All these factors add to the cauldron of speculation.

Due to the speculative nature of NFTs, it is almost impossible to provide quantitative metrics. The same, however, does not apply to qualitative aspects. Through observation, we have listed some of the core characteristics that people look for in NFTs.

1) **Historical Significance**

   NFTs that have a place in crypto history are essential milestones that many collectors value. A good example is CryptoPunks, arguably one of the first digital art NFTs in the space. In 2017, the NFTs were freely given out, but rare pieces are now selling for $1 million dollars. A recent CryptoPunk even sold for a whopping $7.6 million.

2) **Branding**

   Branding is generally associated with celebrity endorsements or big brands in the space. The reasoning is simple. Brands have a powerful influence over consumers and can generate significant market awareness, translating into higher perceived value. An example would be NBA Top Shot, which sold an NFT clip of James Lebron dunking for over $200,000.

3) **Collector-friendly traits**

   It isn't easy to completely categorize collector-friendly traits. A lot of it is to do with social biases or preconceived notions that collectors value. For example, having an NFT with 'socially preferable IDs' – recently, an Aavegotchi Portal was sold for 60,000 GHST just because it is the 2nd portal to have ever been issued (transaction is no longer viewable in the shop). For context, the Portal base price is 100 GHST and does not possess any functional differences from other issued Portals.

4) **Scarcity**

   Perhaps the point which requires the slightest explanation. The less there are in existence, the higher the perceived value. It is simple math and basic human wiring; we always want what we can't have.

5) **Novelty**

   People like to be the first to things. New mechanics or systems can create hype, especially when it is a new and unique product. A great example is Hashmasks which introduced naming mechanics with their art NFTs. During the launch phase, users could name their NFTs before the artwork was revealed – the twist was that names were unique and could not be reused by another user once taken. Within the first two days, all 16,384 Hashmasks were sold out.

6) **Ability to relate with the masses**

The example mentioned before involving the 'rarest Pepe Meme' is an apt illustration. To reiterate, the NFT is a Homer-inspired (from The Simpsons) digital art piece that sold for $320,000. The Homer Pepe is a user-generated card from the Rare Pepe collectibles platform developed by Joe Looney in 2016 and showcased in the Rare Art Labs Digital Art Festival in 2018. While there are other possible reasons for its high value (e.g., historical significance), one cannot deny that part of its success is due to its relatability to the crypto scene. After all, memes and theatricality are the lifeblood of the entire crypto community.

7) **Emotional resonance**

Emotional resonance boils down to an individual's taste and sentimental values. A recent purchase on the OpenSea platform exemplifies this. @seedphrase, a Twitter handle that goes by the name of Danny, bought a Hashmask for $650,000 because of its "Basquiat style" – a reference to noted Manhattan-based artist Jean-Michel Basquiat – and its several layers of "subjective scarcity".

8) **Utility**

NFTs with functional purposes have quantifiable elements. For example, Aavegotchi combines DeFi with NFTs to offer yield farming incentives. The amount of GHST earned corresponds with the type of rarity traits that an Aavegotchi NFT possesses. Assuming an Aavegotchi can make $1000 worth of GHST every month, would-be buyers can use that as a reference point to determine the minimum price point.

One thing to note is that the amount of weight attached to each characteristic is unpredictable. Different NFTs become successful for all kinds of reasons and usually possess one or more of these characteristics. However, it does seem that NFTs with more of these traits appear to be more likely to succeed.

C) Offering Perspective

The market trends indicate that there are numerous reasons for the hype behind NFTs. Some are sociological, while others are changing consumer habits led by external market forces. One of the main drivers behind the recent explosive growth appears to be driven by social commentary.

Does this mean that NFTs are overhyped? Is there a giant bubble waiting to be popped?

To some extent, that may be true. The data show that there has been a massive influx of attention and spending in recent months, likely fuelled by the media and celebrities alike.

But this does not mean that the 'value' within the industry is overinflated. Besides, there are many different NFT sectors – it would be unfair to characterize the entire industry as a bubble, especially when most 'hype' is concentrated around the art segment.

According to Investopedia:

> *'A bubble is created by a surge in asset prices that is driven by exuberant market behavior. During a bubble, assets typically trade at a price, or within a price range, that greatly exceeds the asset's intrinsic value (**the price does not align with the fundamentals of the asset**).'*

As we have just discussed above, NFTs cannot be objectively valued – they cannot be treated like stocks, currencies, or tokens because there are no fundamentals. What is worth $1 to one may be worth $100 to another. As the saying goes, beauty is in the eye of the beholder. Nevertheless, this does mean that the industry is largely speculative.

The real question is whether the current demand is led by genuine collectors/users or by NFT traders who artificially inflate the price to make a profit? If it is the latter, then a bubble is likely because the industry would be primarily supported by market players looking to make a quick flip. Eventually, the bubble will pop when NFT traders cannot sell their purchases at a higher profit, exit the industry, or move on to the next NFT.

On the one hand, there is evidence to suggest that NFT traders are fuelling the recent hype (as discussed above under the 'Profit-making' segment).

On the other hand, the NFT industry has been preparing for exponential growth after its 2019 consolidation. Throughout 2020, DApp contract interaction grossly exceeded the total sales volume between buyers and sellers by 4:1, which suggests that more NFTs are utilized for their intended purpose (e.g., game interaction) rather than being kept as speculative assets. Changing consumer habits and global market trends are also making NFTs more attractive to a broader audience.

Rather than a bubble, the NFT industry appears to be in active price discovery mode. Retail users are being introduced to new forms of use cases that have never been seen before. We already see NFTs shaking up multiple industries where famous musicians like Kings of Leon are tokenizing their albums and selling them on OpenSea, one of the largest NFT marketplaces.

Some aspects may feel 'bubbly', but there is still too little data to justify that conviction. Only time will tell.