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NFT: An Overview, Investment Perception and Its Sustainability

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Abstract: Non-Fungible Tokens (NFTs) have recently attracted a lot of investor interest, with some NFTs achieving selling prices that were previously unthinkable for a non-fungible virtual asset. As with any new and untested investment space, investing in NFTs comes with a number of risks and associated challenges. This paper shows insights on what are NFTs, how do NFTs work and about the sustainability of NFTs. The conclusion of this paper discusses if one should invest in NFTs or not, in addition to its sustainability with respect to environment.
Keywords: Non-fungible token (NFT), Blockchain, Scarcity, Marketing, AIDA, Beeple, bitcoin, blockchain, Christie's, collectibles, copyright, crypto asset, cryptocurrencies, digital art, Ethereum, music business and publishing, online payment systems, property, Second Life, Sotheby's, synthetic worlds, virtual property, virtual real estate.

I. INTRODUCTION

The term non-fungible token (NFT) was first coined byarlenev on the Ethereum forum. "Non-fungible" more or less means that it's unique and can't be replaced with something else.[1] For example, a bitcoin is fungible — trade one for another bitcoin or trade a 10 dollar bill for two 5 dollar bills, essentially the value of the asset remains same in both the cases. A one-of-a-kind trading card or painting (Example: trading Picasso for Monet) however, is non-fungible. If you traded it for a different card, you'd have something completely different. It refers to digital assets that are designed to be a record of ownership of primarily digital media, where the NFT is stored on a blockchain.

Although they've been around since 2014, NFTs are gaining notoriety now because they are becoming an increasingly popular way to buy and sell digital artwork[2]. Especially because of COVID-19 the market for buying and selling NFTs is rapidly expanding. "The pandemic has increased the amount of time people are spending online, making digitally native products like NFTs more attractive, as we're living digitally now more than ever before," said Aubrey Strobel, head of communications at Lolli, a Bitcoin rewards app.[3]

NFT sales volume totalled $24.9 billion in 2021, compared to just $94.9 million the year before. DappRadar collects data across ten different blockchains, which are used to record who owns the NFT.[4] One of the most expensive NFTs sold is by famous digital artist Mike Winklemann[5], better known as "Beeple" [6] crafted a composite of 5,000 daily drawings to create perhaps the most famous NFT of the moment, "EVERYDAYS: The First 5000 Days," which sold at Christie's for a record-breaking $69.3 million.[7]

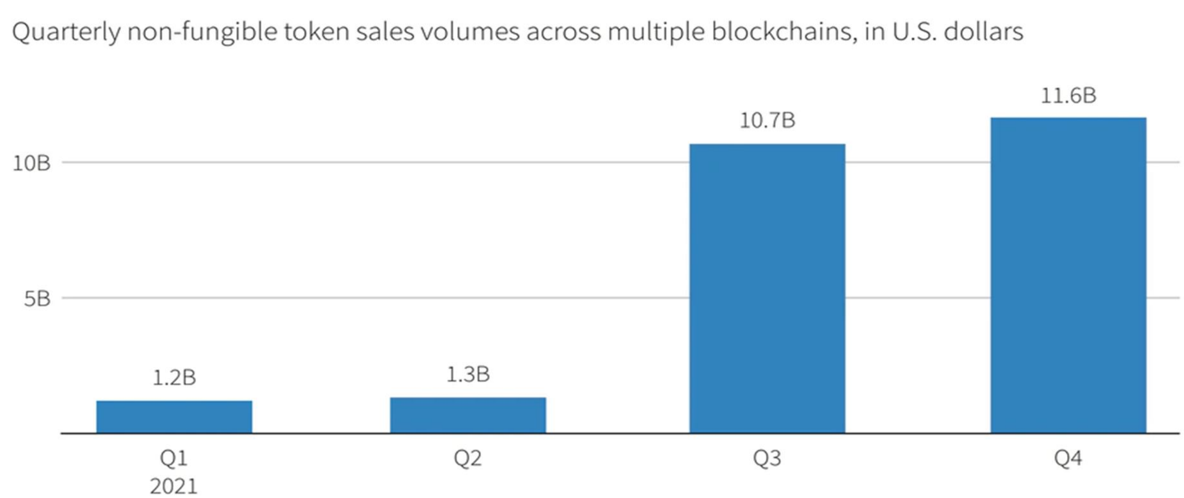

Fig 1: NFT sales climb to $11.6 billion in Q4[4]

II. BACKGROUND INFORMATION

A. How does NFT work?

NFTs are generally sold on marketplaces with different processes depending on the platform of your choice. Essentially, you'll upload your content to the marketplace, turn it into NFT, and wait for it to sell. It's very similar to Amazon or Etsy. If you already have a digital content portfolio for which you own the copyright, here's what you need to do next:

1) Select Your Marketplace, Mint the NFT, and Link Wallet

There are dozens of marketplaces for you to choose from. These include OpenSea, Axie Marketplace, Rarible, SuperRare, and Mintable. Have a quick look at these marketplaces and select one that best suits your content.

Your next step is to "mint" the NFT. In simple terms, minting an NFT is the process of turning the digital file into a crypto collectible or a digital asset on the Ethereum blockchain. Though this may sound confusing, most, if not all, marketplaces will provide a step-by-step guide on minting your NFT right on their platform.

Once you've selected the marketplace, you'll have to link your funded cryptocurrency wallet. After that, upload your digital file and follow the process on your chosen marketplace. Each platform will have different processes and allow you to either sell the item as a one-off purchase or earn royalties.

2) List NFT for Sale

Once you have filled out the information and your file is uploaded and minted, it's time to list it for sale. After listing it for sale, you'll notice the marketplace will calculate "gas fees." Gas fees are payments made by users to compensate for the computing energy required to process and validate transactions on the Ethereum blockchain. "Gas limit" refers to the maximum amount of gas (or energy) that you're willing to spend on a particular transaction.[8] This is an Ethereum blockchain network fee to record the transactions. This fee will vary depending on how busy the network is. The best way to reduce this fee is to list your product during non-peak hours, depending on the marketplace.

B. Can I Trade NFTs?

Yes, you can. This is the second option to making money with NFT. Selling NFTs isn't just for creators. Some entrepreneurs and investors utilize NFTs like stocks and profit by buying and selling them. If you have already purchased a collection of NFTs and don't need them anymore, you can easily sell them the same way you would if you were to create them yourself. The only step you'll skip is the minting process.

The trick to trading NFTs is when to sell them. The right time to sell an NFT will depend on what it is, why you bought it, and if there's any other interest in the item. Quick research on the internet and marketplace can help you determine this.

You'll also have to factor in price appreciation or depreciation. Calculate your potential profit and loss by including additional costs like gas fees, marketplace listing fees, and royalties paid to the original owner. These fees will ultimately reduce your net profit.

For more complex NFT trading that requires in-depth knowledge of the cryptocurrency industry, you may want to consider consulting a professional. As NFTs are relatively new, you can scout freelancer sites to hire someone who can help you with this.[9]

C. Why Would Someone Invest In NFT?

Anyone can view the individual images—or even the entire collage of images online for free. So why are people willing to spend millions on something they could easily screenshot or download?

Because an NFT allows the buyer to own the original item. Not only that, it contains built-in authentication, which serves as proof of ownership. Some people treat them like they're the future of fine art collecting (read: as a playground for the mega-rich), and some people treat them like Pokémon cards (where they're accessible to normal people but also a playground for the mega-rich).

III. FINDINGS

A. Ways To Invest In NFT

NFTs are stored on a blockchain, which is a decentralised public ledger that keeps track of transactions. Most people are familiar with blockchain as the underlying technology that allows cryptocurrencies to exist.

NFTs are most commonly kept on the Ethereum blockchain, although they can also be held on other blockchains.

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An NFT is created, or "minted" from digital objects that represent both tangible and intangible items, including:

- Art
- GIFs
- Videos and sports highlights
- Collectibles
- Virtual avatars and video game skins
- Designer sneakers
- Music

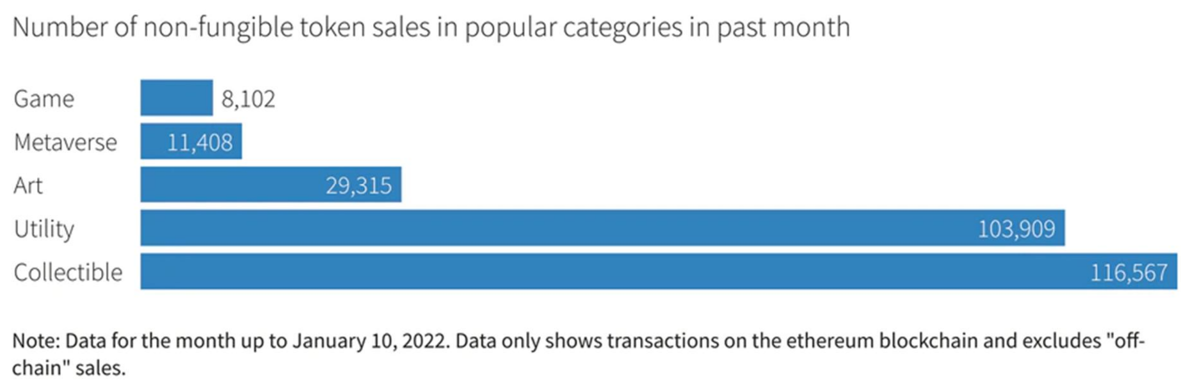

Fig 2: Collectible NFTs are most popular[4]

Collectible NFTs were the most popular category, followed by art. [10] Some of the most eye-watering NFT sales have been for land in online Metaverse environments.

Virtual real estate investor Republic Realm bought land in the virtual world The Sandbox for $4.3 million in November.[4]

Even tweets are taken into account. Jack Dorsey, a co-founder of Twitter, sold his first tweet as an NFT for more over $2.9 million.[1]

Aside from artwork, various digital collectible NFTs have also sold for comparatively high prices, such as a basketball-related NFT selling for $208,000[11] ; and so have videogame-based NFTs. Oftentimes, videogame NFTs represent user-built in-game assets (as opposed to game developer assets), which can thus be traded for greater gameplay enjoyment. The NFT coding allows for the videogame assets to be traded on third-party platforms (example online marketplaces) without the oversight or control of the videogame developers.[12]

Beyond visual artistic works, audio-centered creative works can also be tokenized as NFTs. In the early 2000s, there was an industry-wide fear that musicians would lose the ability to earn from their intellectual property the way that they did when audio cassettes or CD sales were the norm. Online platforms such as torrents caused even further concern that piracy would be rampant and musicians would be unable to earn. Although solutions such as Spotify offered a partial approach to online music monetization, this business model has not been as successful as comparable movie or TV show alternatives (example Netflix). NFTs may be offer another partial mode of monetizing musical assets. In March, 2021 several well-known musicians began to create NFT-based musical assets. [13]

In 2020, they founded Rtfkt, which is sort of like a sneaker brand, except its shoes exist only in a digital world. It has quickly become the most prominent seller of NFT sneakers. The trio started seriously working on the business after making Pagotto's *League of Legends* character a custom pair of sneakers for the 2018 World Cup.[14] Nike trademarked a platform for NFTs called "CryptoKicks" in 2019 but it remains a placeholder for now[15].Several other luxury brands are working on releasing NFTs, too.[16]

NFTs are essentially digital versions of physical collector's artefacts. As a result, rather than receiving an actual oil painting to put on the wall, the customer receives a digital file.

They also obtain exclusive rights to the property. It's true: NFTs can only have one owner at a time. Because NFTs include unique data, it's simple to verify ownership and transfer tokens between owners. They can also be used to hold specific information by the owner or author. Artists, for example, can sign their work by putting their signature in the metadata of an NFT.

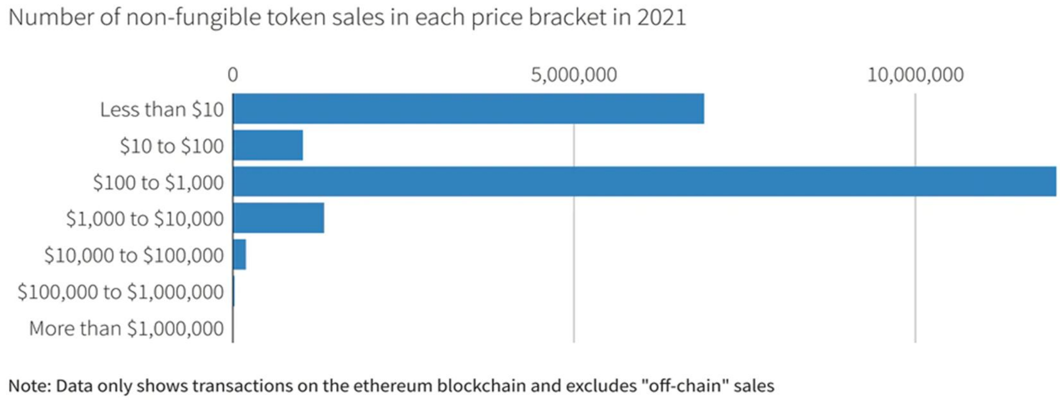

Fig 3: Most NFTs are under $1000[4]

While the most expensive known NFT sale was $69.3 million, a common price range was $100 to $1,000.[17]

B. Royalties

NFT royalties are automatic payments to the original NFT owner made on secondary sales of the owner/artist's creation. The NFT royalty is chosen by the original owner in the marketplace, or blockchain platform, during the minting process. The royalties are tracked on the blockchain.

NFT royalties come from secondary sales, which are sales that occur in the marketplace after the original sale. To use a stock market comparison, this is similar to stocks trading in the secondary market after first selling in an initial public offering, or IPO.[18]

IV. CONCLUSION

As with any new and untested investment space, investing in NFTs comes with a number of risks and associated challenges. Investing because a particular asset is scarce is not a smart long term investment. Scarcity gives value to an item but that is not the only thing that makes an item valuable. There is a risk that NFTs might fade from wider public interest in the longer run, particularly if the contentious notions of value and scarcity that are purported by NFT owners are challenged too prominently; and also if a larger series of hacks and sabotage-activities of malignant actors occurs too frequently to preserve any confidence in NFTs as a store of value.[19]

An NFT’s value is based entirely on what someone else is willing to pay for it. Therefore, demand will drive the price rather than fundamental, technical or economic indicators, which typically influence stock prices and at least generally form the basis for investor demand. All this means, an NFT may resale for less than you paid for it. Or you may not be able to resell it at all if no one wants it.[20]

One of the primary risks associated with investing in NFTs is the lack of regulatory frameworks governing the market. Because NFTs are not regulated by any government agency, investors are exposed to the risks of losing all of their capital if a bad actor on the blockchain for example attempts to defraud the blockchain with a false transaction. Because of the lack of regulatory frameworks, it is also difficult for investors to sell their holdings. One of the main drawbacks of investing in NFTs is that they are still a relatively new asset class, and there are very limited assets that are available to purchase. This means that unlike traditional investments, where you can buy a stock in a company that will be generating dividends in the future, the returns on NFTs are largely predicated on the performance of the underlying asset. This makes it extremely risky for a newcomer to invest large amounts of money in NFTs. It is important to do your due diligence and only invest what you can afford to lose.

If You Are Thinking Of Investing As An Investment Then You Should Take Certain Points In Consideration.

1) Hard to verify the owner/creator of NFT.
2) NFT is less liquid than BTC. Bitcoins available on the blockchain : 21 million>>very high stock to flow whereas NFTs: infinite supply>>very low stock to flow. High prices for NFT will massively increase the new supply coming. High prices for BTC cannot increase supply[21].
3) The market is easier to manipulate. One can ask friends to buy and sell an NFT to pump it up and then sell it to a noob.
4) If there’s a recession or a liquidity crisis, people and business don’t have enough money, meaning the sky high prices of NFTs is unlikely to hold and there will be drastic decline in prices.

5) It's important to note that the IRS has not taken a formal stance on the tax treatment of NFTs to this date. It is possible that NFTs could receive the same tax treatment as cryptocurrency, which would be taxed as property with a long-term capital gains tax rate that varies from 0 - 20% based on your income. Alternatively, NFTs could receive similar tax treatment to stamps, antiques, or trading cards, and be taxed at the collectibles tax rate, which is significantly higher at 28%. However, this difference only comes into question when assets are held for over one year. With that being said, any NFTs sold after a holding period of less than one year will be subject to short-term capital gains tax rates (which equals ordinary income tax rates), regardless of whether they're viewed as property or collectibles.)[22]

6) There are a number of disadvantages associated with investing in NFTs, most of which stem from the lack of liquidity and the lack of regulatory frameworks governing the market. As a result, it can be difficult for new investors to purchase NFTs without access to leverage. For example, if you had 1,000 NFTs, you could not purchase a single share of Facebook without significant leverage. Because of the lack of liquidity in the NFT market, it is also difficult for investors to sell their holdings.

A. NFTs are Sustainable for Environment?

NFTs share one harmful trait with their cryptocurrency cousins: they both use a *ton* of energy[23]. Bitcoin 'mining' already generates 38 million tons of CO2[24] per year, more than the carbon footprint of Slovakia. And a 2018 study published in Nature Climate Change[25] found Bitcoin emissions alone could raise Earth's temperature by two degrees.

Bitcoin is a proof-of-work blockchain, meaning it uses a proof-of-work (PoW) consensus mechanisms to secure the blockchain and verify transactions. PoW means that miners compete against each other to mine a block," says Susanne Köhler, a PhD fellow and sustainable blockchain technology researcher at Aalborg University in Denmark. [26]

"In these competitions, specialized computers generate several trillions of guesses per second to try and win. You could call it a brute-force approach. This is what requires a lot of electricity."

B. Can NFTs be Sustainable?

"Most NFTs operate on Ethereum, which is a proof-of-work blockchain. Ethereum is moving away from proof-of-work to proof-of-stak**e** to secure their blockchain and verify transactions, which will by association make NFTs more sustainable," she says. "However, this is no trivial task and takes time. Using a different (non-PoW blockchain) could also address this."[27]

To put this into perspective, the daily carbon footprint of Bitcoin is the equivalent of watching 57,000 hours of YouTube videos. And, its daily electricity usage is equivalent to the amount of power an average American household uses over the course of 25 days. The environmental impact of NFTs is similar, as it uses energy-intensive computer transactions to authenticate and sell the art.[28]

But in a world where most energy production is still derived from fossil fuels, critics say cryptocurrencies and NFTs will continue to contribute to global warming if change doesn't happen soon.[29]

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