

## Opening Remarks: “NFTs: Future or Fad?”

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What exactly are Non-Fungible Tokens, commonly known as NFTs? In order to understand NFTs, we need to first discuss blockchain technology. I will start with that and then transition into what an NFT is, and that way I can set the stage for some of the discussions and the panels that you’re going to hear later this morning.

So, first, some blockchain basics.

You have to keep in mind that almost everything we do today runs through a centralized system or trusted third party. That trusted third party could be a financial institution, a publisher, or a clearinghouse, for example. The key function of a trusted third party is that it can verify that an account holder has the amount of funds it claims to have in its account or has certain other rights. The trusted third party also serves the important function of verifying the authenticity of those on a network.

There are a couple of problems with a trusted third party. First, there are security issues with relying on a single entity—a single point of failure. If that trusted third party were to be compromised, it would risk the security of the entire network. Second, trusted third parties charge a fee for their services, as they should, because they are providing a service. Third, a trusted third party can cause delays on a network as it verifies transactions.

Going through a trusted third party therefore introduces some friction to the network. Most importantly, what happens if a third party were to suddenly fail as a business? Now, as we sit here in 2021, it’s hard to think about large, trusted third parties failing as a practical matter. But to really understand the evolution and origin story of blockchain—and by extension, NFTs—you have to get your mind back into 2007, when the financial services industry was being rocked. Lehman Brothers and Bear Sterns had shut down. And the idea that an established, globally known and relied-upon trusted third party could actually fail was a realistic conversation at that time.

So, at that time, someone—and no one knows to this day who it was—with the pseudonym Satoshi Nakamoto published a paper outlining a new, decentralized, electronic cash system that’s fully peer-to-peer with no trusted third party. That

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paper is the origin of Bitcoin. The basic idea behind Bitcoin is, “What if we build a distributed system where there is no trusted third party, but through a broad distributed computer network, computers and code could verify the legitimacy and authenticity of transactions and account holders on the network?” Blockchain technology thus replaces a trusted centralized third party with a decentralized computer system that is a master ledger of all account holders on a network and what assets they have in their account.

However, in order to convince people to trust a decentralized computer network, there are a few attributes that the community is going to require.

First of all, the community will want to be able to see the computer code that underlies the decentralized network. If I’m going to a global bank, I trust them as an institution. The fact that the computer code that runs their network is hidden and proprietary does not really concern me, because I trust them as an institution. But if you are asking me to trust a decentralized computer system that is just running out in the world, and where “the community”—however you define it—is maintaining the system, I actually want to see that computer code.

Now, that doesn’t mean that I have to be a computer engineer, but as long as the code is transparent, I have some assurance that there are engineers out there who are studying the code, and who can flag bugs in the code, or detect if the code is actually fraudulent, or if it funnels all the money to one person. So, transparency is key. In this case, that means the code is “open source”—you can actually see the source code, and it is free for all to use.

The second attribute the community will require is the ability to view every transaction. If you are asking me to trust a decentralized computer system, I would want every transaction to be transparent. Now, that does not mean that people’s names and emails are necessarily visible. But I would want to have some sort of address system, even if it’s a pseudonymous string of letters and numbers, where I could verify on my own, if I wanted—from the time that this network was first formed until today—the authenticity of the transaction. Thus, transactions on a blockchain, not just the code, should also be transparent. Here, too, I might not be studying the transaction history itself, but the fact that it is transparent minimizes the risk that something fraudulent is taking place, since it would not go unnoticed.

Finally, a key attribute of blockchain technology—and one that is critically important for NFTs—is that, through the use of complex cryptography, transactions are immutable. That means every block of transactions on a blockchain is built on top of the block before it, creating a chain of blocks. This means, for all practical purposes, you cannot go in and change a transaction that occurred in the past. Now, you might be thinking: “What about all those news reports about cryptocurrency funds being misappropriated, or about fraud in this space?” The reality is that, in most cases, and almost inevitably for large well-established blockchains, such fraud occurs on the so-called on-and-off-ramps to a blockchain—the process whereby you put your funds into a blockchain or extract your money out of a blockchain. The blockchains themselves are actually highly secure. And, for the most part, with very rare exceptions, immutable.

One final background point on blockchains, and then we will dive into NFTs. There is not one blockchain. This is a very common misconception for people first learning about NFTs. A blockchain, or a distributed ledger, is a type of technology. So, you can't talk about "the blockchain" the way we talk about "the Internet." Rather, there is a Bitcoin blockchain that Bitcoin operates on. There is a separate blockchain called Ethereum, which—besides having its own currency, known as ETH—allows developers to build their own customized applications. There is a Flow blockchain established by Dapper Labs, which is the blockchain on which NBA Top Shots NFTs can be found. These are just three examples out of dozens of blockchains that exist today, some of which are private and not accessible to the general public.

The key is that all these different blockchains are generally not interoperable. So, if your asset is recorded on one chain, you cannot move that asset to another chain. It is similar to a time when there were different text messaging services and unless you were on the same phone technology as someone else, you could not message that person.

Okay, so let's move on to non-fungible tokens or NFTs and why they have this unusual name. Most tokens or coins are fungible, meaning they are like dollars. If I were to give someone five one-dollar bills, they would not care which dollar bills I gave them because the bills are fungible. For the most part, it's the same for tokens or coins that are on a blockchain. Every Bitcoin is the same as every other Bitcoin. If I send someone five Bitcoins, they don't care which five Bitcoins I'm sending them. Those tokens are all fungible. But what if you could create a token on chain that was unique? Hence, non-fungible tokens.

If you have unique tokens on a blockchain, you now have a powerful tool that allows you to create a transparent, immutable certificate. So, what could you do with that kind of technology? One use case it would allow you to do is to tag a digital work as an original—that certificate would say, "This version of this digital work is the original, and all other versions are just copies." As that original work was transferred or sold from one party to another over time, you could track its provenance on its blockchain back to when the asset was first created.

Another use case is that it would allow you to use blockchain technology to generate immutable, unique user IDs or tickets that the holder could use to access tangible goods. An early example of this was the group Kings of Leon. They created, or "minted," a limited edition NFT that not only provided the holder with access to some of their music, but also provided access to tangible real-world experiences, such as tickets to their concerts for life and backstage pass rights.

But for the most part, as we sit here right now, most NFTs are used to identify a digital work. To illustrate this, on the screen is a reproduction of the digital artwork *Everydays: The First 5000 Days* by the artist Beeple. This work is a collage of daily works made by Beeple that sold at Christie's at auction back in March for \$69 million. Now, as you can see here on your screen, I was easily able to replicate that work by finding it online, right-clicking, copying, and pasting into my PowerPoint

slide. In a few seconds, I have reproduced the image that someone paid \$69 million for—obviously, this was much easier than trying to replicate a physical work of art. But what you see on screen is, to be sure, a copy of the work and not the original.

Now, we can debate for hours what the difference in value is between the original and my identical copy. But to leave you with one thought on the value of originals, that I think drives the point home for people who might think, “Why would you spend so much money if someone could easily replicate it?”: Imagine that in the future, technology evolves such that scientists could replicate the Mona Lisa in an identical way, meaning they could somehow artificially “age” the paint pigments so that, even if one did a chemical analysis, the two Mona Lisas would be identical in every way. There’s still a fair number of people, and maybe even a majority of people, who would say, “I want the one that Da Vinci painted, not the one that someone else created in a lab, even if the two copies are indistinguishable.” That’s the general idea behind tagging something—even a digital work—as an original.

An NFT also allows creators to release digital works in a way such that they can control access to them. So, I could be a garage band with an album, and my fan base is only 1,000 people. I could use an NFT to tag my work so that only people who purchased and hold the NFT can unlock that work. It provides a lot of power to the creator community. And we’ll get to that in a moment because a lot of the focus of the discussion today will be on that community.

The term “non-fungible “token” is actually a bit of a misnomer. NFTs are not “tokens” but rather pieces of computer code that reside on a blockchain. We talk about them as non-fungible “tokens” because “token” and “coin” are words that are typically used in the blockchain space. And that’s a critically important point. Because an NFT is really a piece of computer code, it allows you to program in different functionality. The function that is talked about the most in this space, and probably the most powerful use case for NFTs, is that you could program an NFT such that every time that the work attached to the NFT was sold, value is automatically transferred to a myriad of stakeholders such as the original creators, rights holders, agents, and so forth. Every time the NFT changes hands, a portion of the purchase price would be sent to the digital wallets of people who are designated to receive the benefit of the so-called secondary sales. NFT issuers could develop very complicated royalty schemes that would be impractical if not done automatically. If you think about it, that’s a huge evolution, because, today, if a relatively unknown artist sells a work for \$10,000, and later they become very famous—let’s say that work now sells for \$3 million. The artist still only receives the benefit of that initial sale; they get nothing on the secondary sale. An NFT would allow them to take some percentage of those secondary sales or to have a few different people receive royalties in an automated fashion.

The fact that NFTs are pieces of computer code leads to another important point to understand. The NFT itself is the certificate of ownership. The digital work with which it is associated is typically not stored on a blockchain. Remember, I said blockchains are immutable, secure, and have all these benefits: That’s true of the NFT itself, that certificate of ownership. But the digital work with which the NFT is associated is usually stored “off chain,” such as on Amazon Web Services. This is

because there is a cost to storing large files on a blockchain which would make it prohibitively expensive to do so. There's a decentralized file system called the Interplanetary File System (IPFS), where a lot of NFTs are stored. But an in-depth IPFS discussion is beyond the scope of this morning's talk.

The NFT itself, if you were to look at the computer code, tells you where that work can be found. So again, bringing it back to the tangible world, imagine the difference between art I've hung on my wall and the certificate of ownership I keep in a locked file drawer. The certificates of ownership might show that I am the owner, describe the work, and say where you can find the work, but it's not the work itself. The same is true in the world of NFTs. People use the term NFT to describe the digital work itself, but in reality, the on-chain NFT and the off-chain work with which it is associated are two different, but linked, assets.

While NFTs became red hot in 2021, they are not a new technology. They actually date back to the 2015–2017 time period. CryptoPunks, which are back in the news because they are being sold at auction at very high valuations, are often considered among the original artworks in this space. They go back all the way to June 2017. One of the big developments in this space was in late 2017 when NFT coding was standardized on the Ethereum blockchain. Until then, it was hard to trade or transact in NFTs since everyone programmed their NFTs in a different way. Standardizing how the code should work on the Ethereum blockchain allowed NFTs to flourish. That said, as you know, it took about three years until NFTs entered the mainstream.

What happened in 2020 and 2021 that added jet fuel to the NFT space? There are multiple theories about that. One is that collectibles overall made a comeback. Another is that during the pandemic, there were a lot of people at home, looking to pass the time, and NFTs seemed interesting and fun and cute, so people started getting involved with them. Yet another theory is that there's a lot of crypto wealth out there, and that people who made a lot of money buying cryptocurrencies early on were looking to spend their money on assets that were on a blockchain. Then, once the wheel got spinning, brands started focusing on this and didn't want to miss out on the opportunity and began minting their own NFTs. So, it's all of the foregoing probably coming together at once.

The theme of today's Symposium is whether NFTs are "fad" or "future." I'd say probably a little bit of both. I think that some use cases, to be sure, are a fad. Collectibles come and go, and this is probably no different in the NFT space. But NFTs present tremendous opportunities for the creator class and rights holders, and those opportunities will last even if some of the collectibles market starts to fade over time. So, let's talk about the NFT market today.

Part of the NFT world, as I mentioned, is the collectibles market. This includes, for example, Marvel having an NFT of a digital image of Spider Man that may look three dimensional. You can display it on a stand, spin it around, illuminate it, and so on. NBA Top Shots is another example. These are basically digital trading cards with stills or video clips presented in a very artistic way.

Brands are also experimenting with NFTs as a kind of loyalty card. Remember, at the end of the day, NFTs are a digital identifier. Brands are looking into whether there are ways that they can use these NFTs to mint what are effectively membership or loyalty cards, where they can easily add additional benefits to the card. They might allow you to transfer or sell the card to someone else. Imagine that I'm a customer of a certain retailer and I'm part of their loyalty program. The card has become more and more valuable over time as the brand has added benefits to it. But I am now moving to a state or country where that brand isn't available, or I've gotten tired of that brand, but someone else is interested in purchasing that card from me. I can potentially sell that card (i.e., the NFT) to them. And now they can enjoy the benefits from the brand. And maybe the brand gets a piece of every resale.

The next area is probably the most interesting, and it ties a lot into today's discussion. NFTs can be used as a means for the creator class to disintermediate the central trusted authority in their vertical market and connect directly with fans. That could be musicians who are using NFTs to distribute their content, for example. So, if you buy my NFT, you're able to access my music. I can also provide you with other benefits, since I can authenticate that you hold my NFT. Digital artists will be able to get around agents and galleries and interact directly with collectors. Video creators and animators could disintermediate studios. In all of these cases, it does not mean the traditional trusted third party model will disappear. But, NFTs provide a different business model that allow creators to interact and connect directly with fans.

This is particularly important for creators who do not have a massive global fan base that allows them to earn a living by making a few cents on every sale. Many artists need to earn a living where the fan base is a small fraction of that. An NFT model might allow them to connect with 10,000 devoted fans who are willing to spend, say, \$50 a year to access that work.

Video games are also an interesting potential use case for NFTs. If you think about it, for anyone who's a video game player, video games often depend on in-game purchases of assets: buying a sword, for example, or buying a "skin" that you can put your avatar in. But those are not transferable from game to game. And you typically cannot transfer or sell that asset to someone else. NFTs allow you to own a digital image, providing the capability for you to take ownership of something that is a digital work. And maybe you could transfer it from game to game or sell it to someone else. Like with all new NFT use cases, this is an area that we're at the nascent stages of.

And finally, one interesting inflection point. For a long time, ownership of a lot of creative works entailed actually owning the work. And by that I don't mean that you owned the intellectual property, but rather that you actually owned a physical copy of an album or movie—you owned the CD or the DVD. We've transitioned over the last number of years into more of a licensing model. Today, as you know, most of what we consume is digital, on a rental basis. So, you might go to a streaming platform to "rent" music or video content. We have moved away from the idea that you actually own copies of content. It will be interesting to see whether NFTs reintroduce the ownership concept for creative works.

Finally, let's examine what the NFT market looks like and who the different players in the NFT market are.

NFT marketplaces are sites where you can buy and sell NFTs—no different from any other platform where you can buy and sell goods or services. OpenSea is probably the most well-known today of these marketplaces.

Another horizontal layer in the NFT space are rights holders. Those are the brands, studios, labels, sports leagues, and other people who have intellectual property that they're minting into NFTs, often in very creative ways.

The art houses and the art auction houses are also in this space.

Finally, there's a very interesting community around what are known as PFPs or profile pictures. These are NFTs that are linked to a digital image of a character in a series. Bored Ape Yacht Club is probably the most well-known of these. These are NFTs that you can buy and, for now, are collectibles. But the idea is to be part of some sort of community.

As you hear me describe the market for NFTs, you may find a tension with one of my first points. I started by saying that the idea behind a decentralized system was to eliminate the centralized, trusted third party so as to avoid the shock of an event like what happened in 2007. But then it sounds like when we talk about this space, we're talking about trusted third parties: We're talking about OpenSeas and the marketplaces and a small number of people wielding a lot of control. And that is a very fair point. Still to this day, a lot—in the blockchain world generally and in the NFT world specifically—is fairly centralized.

For example, I mentioned that one of the powers behind NFTs is the ability to program the code so that you can have royalties automatically paid to the creator and rights holders. But right now, a lot of that is actually done through the platforms, and not on an automated basis through the NFT you purchased. You're dependent on the platform to provide those resale amounts. You're also dependent on the platform's terms and conditions. So the terms attached to your NFT are, again, as we sit here in November 2021, still very much driven by the rights and obligations imposed by the platform on which you purchased your NFT.

While we are on the road to decentralization, we are not quite there yet.

I want to touch on one final point and then have a closing thought or two. You can't be in the NFT space today without coming across something known as a "DAO," which stands for "decentralized autonomous organization." Basically, the idea behind a DAO is, instead of having a corporate structure—where you've got a board and an executive suite making decisions, and everybody who might own an interest in that company or be a shareholder really doesn't have a meaningful say in what's happening—you decentralize governance and have all of the members of the organization act as the decisionmakers and vote on proposals. For example, what the DAO will do or what the DAO will purchase. As with NFTs, DAOs have been around for a while, but have recently gotten much more popular.

How DAOs are characterized legally is an interesting question that's evolving because of some new legislation that's out there, including a law in Wyoming that

allows a DAO to hang off of a more traditional LLC structure. DAOs are relevant to the NFT space because a lot of NFT projects rely on what the community feels, or you have a community buying NFTs and doing it through DAOs. Again, what their legal status is varies widely, depending on how the DAO is set up. But it's an important concept to know as you go out into the world of NFTs.

People ask me all the time: "What inning are we in the evolution of NFTs?" My own personal view is that we're still in batting practice. We're at the earliest stages of this technology. But there's a tremendous amount of really innovative work going on in this space. I feel strongly that with NFTs, the idea of ownership of a digital work and how we handle digital rights was an issue that existed and relied a lot on solutions that maybe did not always benefit the creators of those works. And NFTs really have the opportunity to revolutionize how we do that, and how brands interact with people in a digital age.

To return to the name of this program, I think NFTs are much more "future" than "fad." But this is a gradual process. We should not overestimate the short-term benefits of NFTs, but we also should not underestimate their long-term value. I believe that we'll get to a point where people won't even talk about NFTs: They'll just be in the background—just happen to be the technology behind how something works. But you're not even going to realize that, say, when you get access to music or to tickets, there's an NFT behind it; maybe you're not even going to hear that term. I think that will be a way that digital rights are managed and sold in the future. And with that, let me wrap up and turn it over to our first panel.