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Equity Research Note: Revisiting Cryptocurrency

What has changed since 2018 and why I am still a skeptic

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One of the most challenging things about presenting a unified thesis on the crypto space is that crypto has 1,000 faces. "Crypto" is many different things to many different people. To some it is the future of money. To others, it is a technology that will decentralize established global systems. And, to many, it is also a way to get rich quick. I will not attempt to provide a detailed rebuttal to each and every crypto bull case out there. Instead, I will start with recapping what I have previously said about crypto and then discuss some of my thoughts on how the ecosystem has evolved since 2018. As I did in 2018, I will freely admit that I am not an expert on crypto, but I have done a lot of thinking about the crypto ecosystem, and I have truly tried to hear out the various bull cases out there. **Consistent with the 2018 review, I arrive at the conclusion that, while some of the technologies underpinning various crypto assets may prove useful over time, the vast majority of the value that has been created in this space is attributable to speculative behavior from people who see this as their chance to become a millionaire.**

Let's start with a summary of what I have previously said regarding cryptocurrency in 2018:

- It is entirely possible to separate the underlying blockchain technology from the various crypto assets that operate on this technology.
- Just because blockchain technology has value does not mean that the crypto assets themselves have value.
- For crypto assets themselves to have value, there must be a valuable application specifically for the crypto asset that is independent from the blockchain technology it operates on.
  - I am extremely skeptical of non-governmental cryptocurrencies as mainstream payment methods. It is extremely hard for me to envision a future where governments around the world are comfortable letting non-governmental cryptocurrencies become meaningful parts of the financial system, this would mean giving up monetary policy control to some extent and presents enormous regulatory risk.
  - I am also extremely skeptical of cryptocurrencies as stores of value.
- A meaningful portion of the crypto ecosystem is fundamentally unserious.

I still believe in everything I previously said above. However, as I noted at the beginning of this piece, a lot has changed since I expressed these viewpoints. **In my mind, the one aspect of the crypto ecosystem that has changed the most since 2018 is the shift in the discussion from "crypto as money" to "crypto as a technology."**

My critiques from 2018 are from a time when most were focused on crypto having two main applications: currency/payment method and a store-of-value investment. In other words, "crypto as money," hence "cryptocurrency." There are still plenty out there who believe in the grand dream of non-governmental cryptocurrencies as a true replacement to global fiat currencies and those that still firmly believe that Bitcoin's (BTC) true value is as a store of value ("digital gold"). However, much of the energy in the crypto ecosystem right now has become focused on other applications of crypto. In general, these new applications revolve around technology enablement or using a crypto token and its underlying blockchain to create various applications. These technological solutions go beyond "money." This is where terms like "NFT" and "Web3" come into play. Bitcoin and Ethereum (ETH) still dominate the market cap charts (#1 and #2 respectively), but there are now 44 crypto tokens with market caps between $2B and $20B. In general, the purpose behind all of these tokens is to build solutions/applications on top of blockchains.

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Their namesake tokens are simply functional units that allow people to participate on their respective blockchains and various applications running on those blockchains. The vision for each project varies but usually involves disrupting some sort of traditional, centralized system with a system built around their tokens, blockchain, and applications.

Ethereum is the most talked about crypto asset when it comes to these types of applications. The vision of Ethereum is that users will build decentralized applications (dapps) using the Ethereum blockchain. This is supposed to be accomplished through the use of "smart contracts," which essentially just means there is programmable code living on the Ethereum blockchain. As Ethereum's website puts it: "Smart contracts digitize agreements by turning the terms of an agreement into computer code that automatically executes when the contract terms are met." This can be as simple as, "If this person sells this asset, automatically take 5% of the sale price and send it as a commission to the original owner at this blockchain address." This kind of IF/THEN simple programmability is largely what people think about when they see the term "smart contracts," but it is also important to highlight the grand vision for Ethereum involves much, much more complicated code running as dapps. Ethereum evangelists essentially believe that most any existing application can be recreated as a dapp on the Ethereum blockchain. **In a way, dapps are simply the continuation of the decentralized vision of BTC. Just as BTC attempts to remove centralized third parties from the payments/banking system, many of these "crypto as a technology" tokens/projects are attempting to remove centralized third parties from various other types of systems by turning their functionality into automatically executed computer code.**

So, what is Web3 and what are NFTs? These are concepts that rise out of the crypto as a technology-enabler mindset. **Web3 is simply a term meant to signify a decentralized internet;** an internet where the applications we interact with are not owned and run by private entities like Google, Facebook, Microsoft, Amazon, Apple, or Netflix but are instead distributed applications (dapps from above) that run on various blockchains. There is a strong "take the power back" feel to this, similar to how BTC's original goal was to "take the power back" from the established global financial system. Proponents of Web3 point out issues with the current state of the internet (dominated by mega-cap technology companies, monetization of personal data, censorship questions) and see a decentralized internet built on top of various blockchains as the solution. **NFTs are a more specific concept, and in general, they are simply a token that represents ownership of a digital asset. NFTs are a very simple smart contract.** You can think of it as a digital certificate of ownership that can be passed around as whatever digital asset it is tied to gets bought and sold. You send me ETH to buy a digital asset and the smart contract automatically transfers the digital ownership title to you. The classic example that gets talked about right now with NFTs is digital artwork. The NFT is the token that represents ownership of a piece of digital art; I have a thing that says I am the official owner of this picture of a monkey (see Bored Ape Yacht Club). If I want to sell that piece of art to someone else, they will transfer me cryptocurrency (likely ETH) and the smart contract embedded in the NFT will now recognize their blockchain address as the owner of the picture of a monkey. The idea behind the NFT it twofold: one, the smart contract built into it allows for the transfer of ownership of the digital asset, and two, at any one point in time the record of who (which blockchain address) owns the digital asset is visible on the blockchain for anyone to see, thereby providing an easily verifiable "certificate of ownership."

These are very simplistic definitions. It gets much more complicated from here. But as I said in my opening to this piece, I cannot address all the 1,000 faces of what crypto "is," and there are frankly many parts of the ecosystem that I do not claim to understand. That is the challenging part about thinking about a concept that can be as simple as "buying collectible .jpegs of monkeys for $500K" but as complicated as a vision for reshaping how global institutions operate. But as I did with cryptocurrency in 2018, let me try to simplify in order to explain why I am also skeptical of the crypto as a technology enabler mindset, just as I was skeptical of cryptocurrencies in 2018:

I would categorize the problems I see with the "crypto as a technology/enabler"/Web3 mindset into 3 high level statements:

1. **I see large structural issues with how this ecosystem currently exists. It is rampant with bad actors, and the value within the system is not tied to any real utility but simply created through a closed loop system where participants only make money through others entering the system**

- Crypto technology projects sure look a lot like SPACs with even less regulation, which creates a breeding ground for bad actors.
   - The problems with SPACs have been well-documented, but these projects are essentially SPACs on steroids; giant crowdfunding campaigns where "investors" have no recourse against fraud/bad actors.
- The values of these tokens are disconnected from any real utility the projects are providing; they are closed loops.
   - The inescapable fact is these projects are built on top of tokens that primarily become speculative assets as opposed to assets that provide some sort of actual utility.
- Behind most of these decentralized projects are real entities and real people that financially benefit from, and have overwhelming power over, the projects they have created.
   - The problem with this is twofold: one, it creates a financial incentive for the project owners to try to extract as much money as they can from the project, and two, it fundamentally goes against the entire concept of decentralization.

2. **I do not think the vast majority of crypto/Web3 projects will ever be able to provide meaningful utility outside of their closed loop systems.**

- I see massive impediments to actually implementing Web3 type applications for any meaningful workloads.
   - Where does your data sit on a truly decentralized app (dapp)? Split up into a million pieces, bits sitting on various computers all over the planet? Some of it likely sitting on infrastructure in Russia, Iran? On infrastructure sitting in the basement of a computer hacker?
   - What company will ever be comfortable with not having an understanding of where their data sits? Or not understanding exactly where the code that runs your business is being executed?
   - Critical data and applications need to be able to be accessed by trusted third parties; they need to be able to be monitored, changed, appended, fixed, reported on, regulated, and deleted.
   - In my estimation, running critical applications as dapps simply gives up control that needs to exist.
   - The world's existing data center infrastructure has taken many, many billions of dollars to create. This infrastructure powers the applications that run countless global systems.
   - I believe it is naïve to think a distributed public network will be able to remotely replicate the existing private infrastructure that has been built.
   - I believe the product of all this is that no critical applications will end up being run in a fully decentralized/Web3 type environment.
   - I see the primary participants in Web3 perpetually being those trying to get rich off some new creative idea.

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3. **I think the benefits of decentralized systems are grossly overestimated, and I fear the decentralized "solutions" produce far worse outcomes than the centralized "problems" they are trying to solve.**
- A decentralized environment based on anonymity means no one is accountable.
  - Anonymity may provide a solution to what some feel is a problem with the current monetization of our personal data, but that does not mean all systems can or should function with anonymity.
  - Bad actors thrive in anonymity, and anonymity brings out the worst behavior in people.
  - The problem with a world where no one answers to anyone is that no one answers to anyone.
- A decentralized environment means nothing can realistically be regulated.
  - Shielding from censorship/regulation may provide a solution to what some feel is a problem with large corporations controlling what we can and cannot say but that does not mean that regulation does not serve an essential purpose.
- A decentralized environment is inflexible.
  - Turning everything into computer code may provide a solution to what some feel is a problem with our decision-making capabilities, but that does not mean every decision that will need to be made within a system can be expressed as code or anticipated by those who are developing that code.
  - We need the ability to correct, adjust, and intervene in systems. Decentralized solutions built on top of public blockchains are not built for these activities.

In conclusion, crypto/Web3 enthusiasts are always asking us to "imagine a world where..." Well, when I imagine the world they're describing that runs on decentralized systems, I see the possibility of anarchy without responsibility. I see a world where decision makers can hide behind anonymity. I see a world where everyone can easily verify what "is" by looking at public blockchains, but no one can describe "why" we are where we are or "how" we got here.

We are obviously in the early days of this technology. It is true that technologies evolve and improve. The internet did not become what it is today overnight. And yes, in many respects, it is hard to envision what a technology will become in the future or what impact it will have on us. What I am saying is that we should look at the whole picture: the current state of the ecosystem, the positive impacts it could have, and the negative impacts it could have.

We are living through an experiment here. New technologies can certainly be exciting. Everyone is searching for the next big thing, the next investible idea that changes everything just as the internet did. Crypto possesses a powerful narrative, but I question whether or not investors crave this next grand idea so badly that they are jumping in headfirst without taking the time to truly examine what is being offered.