

Cryptocurrency and Blockchain

Makena's Approach to Disruptive Technology

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Dear Makena Community,

Cryptocurrency and blockchain could be the most disruptive technology we have seen in decades, with the potential to upend fiat currencies, financial markets, the internet, and even our current notion of a corporation. While this may be a multi-decade journey, we see opportunity today to invest in what we view as the next generation of software infrastructure. As cryptocurrency crosses the chasm from hobbyist and niche to mainstream, tremendous value and utility will be unlocked.

The rise of smart contract platforms like Ethereum have created a foundation for new types of decentralized business models. This paper covers the three following opportunities and Makena's approach to this developing space:

- I. Digital Ownership and Distributed Finance
- II. Distributed Web Applications (Web 3.0)
- III. Store of Value (Digital Gold)

Overview

The term "crypto" refers to "cryptocurrency" and often narrowly defines crypto as a currency. While Bitcoin, Ethereum, and other networks have tokens attached to them and can potentially function as a medium of exchange, many of these tokens are more like equity in next generation internet companies than currency.

At the most basic level, crypto and blockchain are a new type of computing platform. Like past evolutions in computing technology (e.g. PC, internet, mobile), this new platform has unique features that we expect will drive new business models and a wave of innovation. The most defining feature of crypto is decentralization. All prior technology platforms are controlled by individuals or organizations, and users ultimately must trust those people. Blockchain networks are truly independent, self-governed, autonomous computers.

While Bitcoin is the first use case and is commonly known mainly as a store of value, the underlying technology will have much broader applications. The core of Makena's investment thesis is based on the opportunity in smart contract platforms and the applications built on top of them. Ethereum was the first smart contract platform that allowed developers to build on top of its network to enable a wide range of functionalities. You can think of Ethereum like a giant operating system running across a network of computers. This operating system lets you run different types of decentralized applications such as financial and web applications. As these applications run, they require computing power on the Ethereum network and users pay for this computing power with the native coin of Ethereum, Ether. Tokens of smart contract platforms like Ethereum should accrue value as more and more applications are built on top of them. By owning a token in Ethereum, you capture value as the network's utility grows. While many platforms are being developed to compete with Ethereum, we expect a limited number of smart contract platforms to ultimately be successful and host the majority of decentralized applications.

In addition to value accruing to smart contract platforms like Ethereum, we expect value to accrue to the applications that are built on top of them. These applications also have tokens and accrue value similarly to equity. For example, MakerDoa is a lending platform (and stablecoin) built on top of Ethereum. Users can lock up

collateral (digital assets) and borrow another digital asset that can be exchanged for USD. Borrowers pay a fee that accrues to the holders of the Maker token. The Maker token looks like equity, with revenue distributed to its token holders, except there is no centralized company. The application entirely resides in code. An investment in the Maker token can be analyzed with a traditional discounted cash flow model, which forecasts expected growth in lending volume and corresponding revenue. The company reached \$400M in loans in only 20 months due to its programmatic lending and use of smart contracts, which reduce counterparty risk. While MakerDoa is just one application, we expect many applications to be built on top of smart contract platforms and provide attractive investment opportunities.

I. Digital Ownership and Distributed Finance

Most online financial applications today are representations of ownership, but they are not actual ownership. You can see property records online, but you cannot trade property online. You can sell a car online, but you cannot transfer title online—a physical transfer of a pink slip is required in California. You can see your bank account balance online, but you cannot transfer money online—a wire transfer is not an online transaction. There are some financial products that seem natively digital (e.g. Paypal/Venmo), but they use legacy technology to move money (e.g. ACH). The digital ownership thesis is that all types of ownership will become digitally native and will lower costs, improve speed and efficiency, and lead to significant innovation of financial products including broader access.

Crypto tokens are a new type of ownership that is natively digital and can be efficiently stored and traded on public blockchains. A crypto token can represent digital assets like Bitcoin and Ethereum, but it can also represent non-digital assets like equity, real estate, and other physical assets. The full potential of crypto and blockchain is for all types of assets (digital and non-digital) to move onto public blockchain networks where they can more efficiently be tracked, stored, leveraged, traded, and settled. With digital records of ownership, many applications and functions of the financial sector will be replicated on blockchain networks. This will not only improve the speed and flexibility of existing functions (e.g. settlement of equity trades, speed of payments) but will unleash innovation that will result in new use cases such as more distributed ownership, distributed lending, and liquid markets in non-traditional categories.

Much of the financial system is already being replicated to serve the crypto ecosystem, including banking, brokerages, and payment products. The endgame is to move the world's financial system to crypto technology as digital assets become more dominant and non-digital assets move onto blockchain networks. A blockchain-based financial system also allows the two billion unbanked people to integrate into the financial system. This is possible because most crypto wallets and assets can be created anywhere with an internet connection, have no minimum balances, and provide products not available in most of the world, including access to the US dollar, micro payments, and micro investment opportunities in public markets. Digital ownership of assets will allow for significant efficiency in the financial system and will lower the costs of all financial services and transactions including payments, lending, and investing. Even Ben Bernanke appreciates the value that crypto could provide to the current payments system.

“[Virtual currencies] may hold long-term promise, particularly if the innovations promote a faster, more secure and more efficient payment system.”—Ben Bernanke

Core to the thesis of Distributed Finance is a smart contract, a self-executing contract written in code. Smart contracts allow anonymous parties to transact without needing a central authority or legal system to ensure the transaction will be carried out fairly. These contracts can speed up financial transactions and reduce counterparty risk because the agreements execute automatically. For instance, a debt security that matures can automatically be

paid to the borrower or an escrow payment that closes can automatically be sent to the seller. Smart contracts can be used to set up derivatives that execute without a third party. If one party fails to maintain margin which is held in the smart contract, the smart contract will close out the contract automatically and distribute remaining balances to the appropriate parties. Smart contracts can hold, transfer, and manipulate money and are expected to lead to more advanced derivatives, lending, escrow, securities, and insurance instruments.

II. Distributed Web Applications (Web 3.0)

The core of the Web 3.0 thesis is to create open platforms where users are able to control their data and developers are free to innovate and build. Developers who build applications on top of Facebook, Twitter, or the iPhone are beholden to those platforms and their changing policies and fees. Independent platforms on blockchain allow for many actors to interact on equal footing without the interests of a corporation skewing the balance of power between parties.

Blockchains can separate an application from its data, which provides users greater control of their data, allowing for better privacy and collaboration. We are also seeing new models of ownership where users are compensated for their contribution to a platform. Imagine being paid for being a high-volume poster on Facebook or LinkedIn or accruing equity in Uber and Airbnb as a driver or host. Web 3.0 enables new models of ownership that will lead to new types of businesses.

One of the most prominent non-financial use cases is Filecoin, an open-source, decentralized network for storage. The protocol creates an autonomous marketplace where storage providers, generally data warehouses, can offer storage and be paid in the native token of the network. Filecoin is expected to lower storage costs and provide increased stability with no single point of failure. The network has recently reached 1 billion GB in storage capacity.

Another example is Forte. The company has built a blockchain network for virtual gaming assets. Game players who purchase virtual game assets or earn them during game play can store them on a blockchain network. The network is an open standard that allows virtual goods to be used across gaming platforms. It also creates a secondary market for gaming assets.

III. Store of Value

Part of the digital ownership thesis is that some digital-only assets will become a store of value as either an equity-like security (previously discussed), a stable coin, or a form of digital gold.

Stablecoins are crypto tokens that are stable in price. This is achieved using different mechanisms, but they are generally backed by another asset. The USDC stablecoin is tied to the US dollar and backed one for one with dollars. Dao is another stable coin that is also tied to the US dollar, but it is backed by Ether and other digital assets. Given the volatility of Bitcoin and Ether, stablecoins play an important role in payments, lending, and storing value. The circulation of stablecoins has reached \$20 billion and continues to grow at a rapid rate.

Some crypto assets, like Bitcoin, may function in a similar role to gold and derive their utility merely from their use as a store of value. Bitcoin has many similarities to gold in that it is durable, transferable, divisible, scarce, fungible, and non-sovereign. Bitcoin also has some advantages over gold in that it is globally transportable, and its supply chains are auditable. It is a more practical store of value for many people, including the 500 million people that live in countries with high inflation.

Conclusion

Investing in crypto and blockchain technology is consistent with our venture strategy to invest behind emerging trends in technology, whether in SaaS, social networks, mobile, or biotech. Similar to biotech, we expect the best managers to be those that are specialists and dedicated to crypto and blockchain. The space does not lend itself to generalist venture firms given the technical complexity, the token structures, and the largely independent ecosystem. While some of the on and off ramps will have business models that resemble traditional businesses (e.g. brokerages, custody), we are also seeing a plethora of new business models emerge that are unique to crypto (e.g. distributed lending). We expect dedicated managers are going to be best suited to evaluate and invest in these emerging platforms.

While it is still early in the maturity of crypto and blockchain technology, we believe the technology could spark a wave of innovation. This opportunity prompted us to construct a small portfolio of dedicated crypto managers within our venture capital program. Consistent with our investment process and long-term approach, we are currently developing partnerships with talented investors and thought leaders in the space with whom we can scale as the opportunity matures. We realize that regulation, technological complexity, and other factors pose significant risks to scaling crypto technology, but we believe this opportunity set is uniquely suited for our investment approach, which is long-term oriented and manager-led, and that the risk of modest allocations is justified by the massive upside potential.

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