Hashdex

The Investment Case for Crypto

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Crypto has emerged as the world's most exciting asset class. We believe the broad application of blockchain technologies is fueling the digitalization of our lives, transforming entire industries, and disrupting the global financial system.

The simplest definition of a crypto asset is a digital currency or token that uses a blockchain to provide a medium of exchange. Bitcoin's most important technological innovation was the creation of the first blockchain, a decentralized public ledger where transactions are confirmed by a network of compensated participants.

While blockchains are a vital tool to make the digitalization of services and products a reality, they cannot exist without their native coins or tokens. These crypto assets collectively share five key characteristics that make them attractive for investors of all stripes.

1. Crypto has a unique and attractive supply/demand dynamic

The price of any asset is a function of supply and demand. There is only so much oil that can be extracted or sneakers that can be manufactured at any given time, so higher consumer demand will lead to higher prices. This dynamic applies to crypto assets as well. However, unlike oil or sneakers, crypto assets have a fixed or known supply. There will only ever be 21 million bitcoin, for example, so it is truly one of the world's only scarce and immutable assets.[1] A fixed supply cap gives investors confidence the underlying asset's value will not be diluted by an increase in supply. Networks that allow participants to explicitly know a crypto asset's supply dynamics, such as Ethereum, can also help investors make informed decisions about an asset's future value by making crypto assets' inflation schedule more predictable than fiat currencies and most other investable assets.

Because of crypto assets' unique supply dynamics, there are two key questions an investor should consider when evaluating a coin or token. First, will demand for the benefits of its underlying network be higher or lower over the long term? Second, will demand for the tokens required to validate this network be greater over the same period? If the answer to both questions is yes, then the crypto asset's characteristics are setting it up to be an attractive investment.

> *Crypto investors can be confident that an asset's value will not be diluted by an increase in supply.*

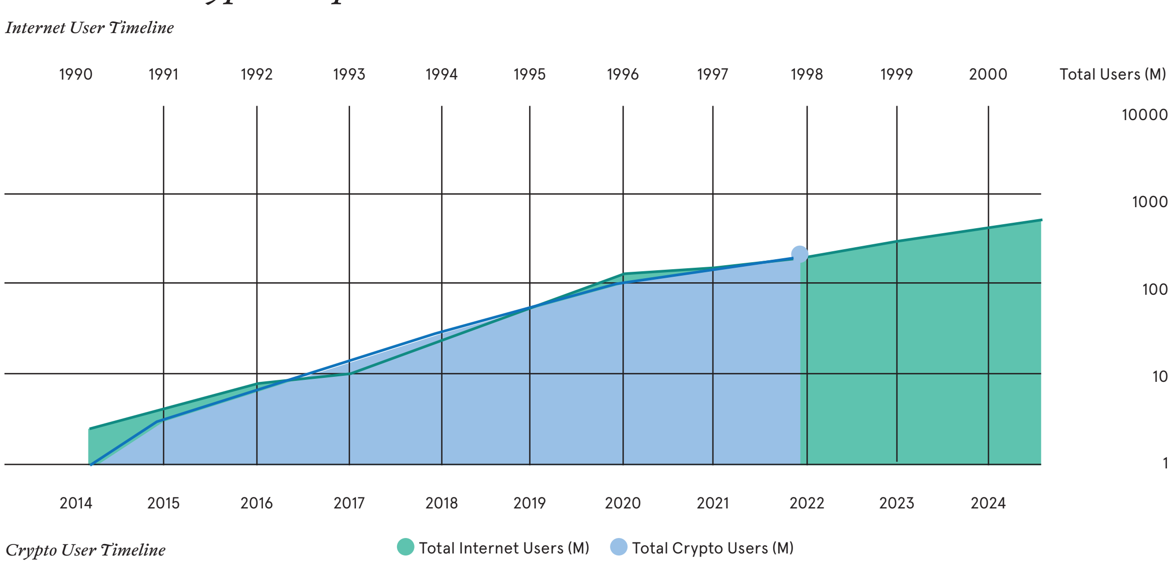
[1] Fidelity Digital Assets. Bitcoin First: Why investors need to consider bitcoin separately from other digital assets. January 2022

2. The demand for crypto is creating enormous growth potential

The growth potential for the crypto asset class cannot be overstated. As the number of crypto network users has increased, demand for the tokens that run on these networks has risen and we believe will continue to rise. Since 2015, the increase in crypto users has run in parallel with the increase in internet users in the mid-1990s and today, crypto usage is where internet usage was in 1997. However, while it took the internet until 2005 to hit one billion users,[2] the number of crypto users is expected to hit this figure by the end of 2022.[3]

Metcalfe's Law,[4] a theory used to explain the network effects of communication technologies, became popular in the 1990s as a way to understand the growth of the internet. It theorizes that the value of a network increases with the number of connected users. One person with a telephone is as useless as one person with a Facebook account, but as users increase the value of having a phone or being on social media increases exponentially. This applies to crypto in the same way it applied to fax machines, cell phones, or any other innovation in communication technology.

Internet vs. Crypto Adoption



[2] World Bank Group, "Digital Dividends" report, May 17, 2016

[3] Crypto.com, "Crypto Market Sizing" report, January 20, 2022

[4] https://en.wikipedia.org/wiki/Metcalfe%27s_law

One key differentiator with crypto in this regard is the incentive structure. Cell phone and internet services require a monthly fee from users, benefiting the infrastructure providers (e.g., Verizon or Comcast). Blockchains provide this infrastructure with crypto networks, and the protocol tokens are used to pay the network. Instead of value from network growth accruing to individual corporations, it accrues to the token owners.

$$\textit{Network Value}_t = C * n_t^2$$

Regardless of a technology's potential, there is a long history of skepticism around innovation. In 1876, Alexander Graham Bell showed US President Rutherford B. Hayes a telephone for the first time. The president responded "That's an amazing invention, but who would ever want to use one of them?[5]"Unlike the telephone in 1876, crypto has already demonstrated incredible growth. The industry has grown at a faster pace than the largest public companies in the world, hitting a $1 trillion market cap in only 12 years. In comparison, reaching the $1 trillion milestone took Microsoft 44 years, Apple 42 years, Amazon and Google (Alphabet) more than 20 years,[6] and Facebook more than 15 years.[7]

We believe no other asset class has demonstrated this type of rapid growth, and no other asset class offers this growth potential. We believe that the development of the crypto economy is still in its very early stages and that there is tremendous value to be unlocked in these markets over the long term.

The number of global crypto owners is projected to reach one billion by the end of 2022.[8]

[5] https://www.elon.edu/u/imagining/time-capsule/150-years/back-1870-1940/

[6] https://markets.businessinsider.com/news/currencies/bitcoin-trillion-market-cap-milestone-faster-amazon-apple-microsoft-google-2021-4.

[7] https://www.cnbc.com/2021/06/28/facebook-hits-trillion-dollar-market-cap-for-first-time.html.

[8] Crypto.com, "Crypto Market Sizing" report, January 20, 2022.

3. The crypto ecosystem is attracting investment capital with projects covering every corner of the economy

While it's easy to be distracted by rising crypto prices, there is much more to the story of this new asset class. The crypto ecosystem is incredibly robust and diverse and continues to attract high levels of investment capital. There are currently more than 800 crypto funds[9] and more than $25 billion was raised in venture funding during 2021.[10] Additionally, the crypto ecosystem has 64 unicorns—companies valued over $1 billion.[11]

This ecosystem is not only being funded by serious investors, it is being built by serious technologists and entrepreneurs creating great products and services on these networks. The driving factor behind the strength of the crypto ecosystem is its community of developers. Ethereum has the most active developer community, with over 800 average weekly GitHub commits[12] and 220 monthly active core developers.[13] Beyond those working to make these networks secure, there are passionate entrepreneurs all over the world, building disruptive applications on top of crypto networks. Many have migrated to crypto from financial services, technology, and other legacy businesses because of a strong belief that crypto is the future. Because value creation follows talent, we believe the crypto economy is set up to only grow stronger, more diverse, and economically influential.

Crypto companies raised more than $25 billion in venture funding in 2021.[14]

[9] https://cryptofundresearch.com/cryptocurrency-funds-overview-infographic/

[10] https://www.theblockcrypto.com/linked/128397/crypto-companies-raised-just-over-25-billion-in-venture-funding-during-2021.

[11] https://techcrunch.com/2021/11/19/as-crypto-unicorns-multiply-the-us-stands-out-as-ground-zero-for-blockchain-winners/#:~:text=There%20are%20now%2064%20total,are%20a%20few%20reasons%20why.

[12] A "commit" on GitHub is a recorded change to code made by a developer.

[13] https://outlierventures.io/wp-content/uploads/2021/02/OV-Blockchain-Dev-Q1-2021-_v7.pdf.

[14] https://www.theblockcrypto.com/linked/128397/crypto-companies-raised-just-over-25-billion-in-venture-funding-during-2021.

4. Crypto is emerging alongside social, political, and macroeconomic changes driving global adoption

The timing of Bitcoin's creation is notable in that it came on the heels of the 2007-08 financial crisis, when faith in financial institutions was at an all-time low. Millennials and those who grew up in the wake of the financial crisis were particularly skeptical of the global banking system and this sentiment remains.[15] As governments have responded to the pandemic with unprecedented levels of stimulus, concerns have risen over the future value of fiat currencies and the impact inflation will have on economies and individuals.[16]

While economies have generally expanded over the last decade, the growth was accompanied by a number of deteriorating social conditions exacerbated by the pandemic. According to Bridgewater Associates, the decade leading up to COVID-19 saw deterioration in a number of social factors, including equality, health and safety, and housing affordability.[17]

There has been a structural shift toward digitalization that the pandemic environment has accelerated. This paradigm shift is leading to demand from individuals and businesses for higher internet standards. Blockchain-based innovations are not only at the forefront of improving our digital lives, they are also front and center in debates about economic opportunity and financial access. We believe crypto is presenting the opportunity for a financial system redesign, one that will be more trustworthy, equitable, and accessible.

Blockchain-based innovations are important for economic opportunity and financial access.

[15] CNBC. Millennials and big banks have trust issues—here are three ways financial institutions are trying to fix that. Jordan Smith, January 16, 2019.
[16] "Governments World-Wide Gorge on Record Debt, Testing New Limits," Wall Street Journal, July 12, 2021.
[17] https://www.bridgewater.com/research-and-insights/social-conditions-are-an-increasing-consideration-for-how-the-economy-will-be-managed

5. Crypto is the necessary "plumbing" for Web3 and the metaverse

Web 1.0 emerged in the 1990s with the internet but lacked an interactive element. Web 2.0 followed in the 2000s with the launch of multi-functional websites, applications, and social media platforms. Web3 represents the next generation of online connectivity and will be characterized by user empowerment and driven by blockchain-based applications. In the simplest of terms, the first iteration of the web allowed users the ability to read, the web's second phase allowed for the ability to read and write, and Web3 gives users the ability to read, write, and own content on the internet.[18]

The metaverse, which might permanently change how humans interact with technology, will take the opportunities available on the internet to another level. Morgan Stanley predicted in a recent report that the Metaverse may become an $8 trillion market.[19] As the pivot towards decentralization unfolds, crypto assets will facilitate the shift to a truly borderless, open internet accessible and ownable by all. Over the long term, crypto assets are very well positioned for the ongoing structural shift toward digitalization. We believe Web3 is the inevitable next iteration of how we use the internet and represents a shift away from large tech firms having control over users. Crypto and blockchain technologies will be as important to Web3 as the electric grid and water supply are to the houses in a neighborhood.

Prior to the creation of blockchains, investment value was derived from the centralized applications built on top of decentralized protocols. For example, investors benefited from the success of Google or Facebook applications built on top of HTTP or SMTP. Crypto assets have flipped this concept on its head. Instead, significant value can now be derived from the underlying protocols because of a blockchain's native currency or token. This shift from "thin" to "fat" protocols is a core component of Web3 and we believe is helping create unprecedented investment opportunities.

We believe Web3 will be driven by blockchain-based applications and innovations.

[18] https://www.himgajria.com/writings/web3

[19] https://coinyuppie.com/metaverse-may-become-an-8-trillion-u-s-dollar-market-these-companies-have-the-most-opportunity/

How to invest: Crypto assets within a portfolio

An investment portfolio is built around a diversification strategy aimed at providing a mix of assets with varying return characteristics. Finding assets that have low correlations to one another is key to diversification. Crypto, considered as an alternative asset class because it falls outside of the typical stock and bond mix, can help bring these diversification benefits to a portfolio. Our research has shown that a small crypto allocation to a portfolio can provide potential upside with only a marginal increase in risk.[20]

It's also important to consider diversification among crypto assets. Crypto is not a monolithic asset class—there are many different types of blockchains with different benefits. There are thousands of crypto assets focused on many applications: currencies, gaming, file storage, dApps, and DeFi to name a few. Crypto assets are competing for users in each of these segments, and only time will tell which assets—and segments—take off. Each may perform differently in different market environments, and correlations may vary as well. Regardless, we believe having broad crypto exposure is a great way to participate in this market without the idiosyncratic risk of investing in individual assets.

[20] Source: Hashdex analysis of Bitcoin returns sourced through Bloomberg; portfolio analyzed through Zephyr

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