

The progression and trends in the tech industry

Like most industries, the progression of the information technology industry is cyclical; this cycle includes phases of expansion, consolidation, and decentralization.

After a new open-source platform surfaces, businesses enter the industry to leverage the new platform and a period of expansion commences. As the new platform becomes more popular, more firms enter the industry, and production costs fall as the space becomes more competitive. As a result, prices and profit margins get pushed down, and the market share in the industry gets diffused from the early companies building on the platform, to more companies that operate in the industry, decentralizing the existing market share.

The fact that businesses are profiting in the market attracts even more startups, and competition builds up; as a result, prices drop even further, however, the drop-in prices usually attracts new consumers. Overall, the size of the industry increases and new opportunities for consumer products that can be mass-adopted arise.

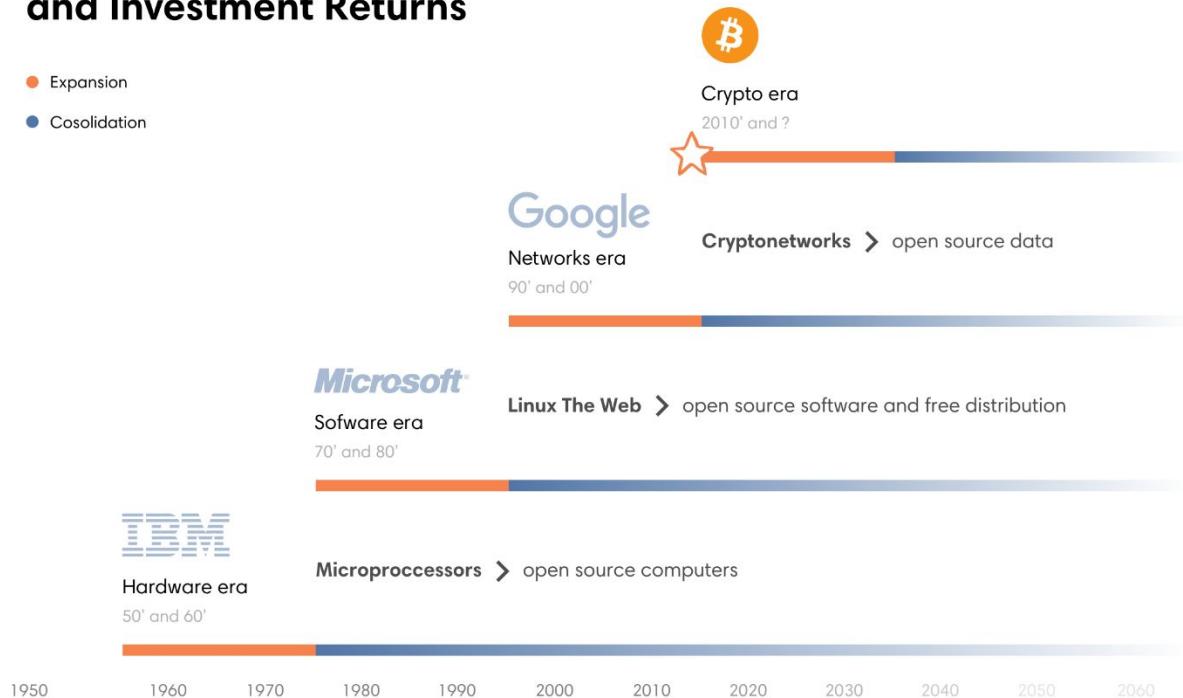
Individuals who can successfully create products on top of the new platform can leverage their share of the industry at a later date and expand both vertically and horizontally; at that point in time, it becomes expensive for new startups to compete with the companies that have established themselves as giants. As a result, a number of start-ups begin to live in the shadow of the giants and the returns on venture capital diminish.

Because it becomes so difficult for start-ups to compete with established and reputable companies, demand begins to form for an industry alternative, a new open-source platform that decentralizes the unique selling points of the existing industry. When entrepreneurs realize this, they move to serve the market where costs are low, where there is no competition, and where the potential returns are high.

At this point, a new cycle is about to repeat itself again. An open source platform will emerge and attract new businesses; more firms will enter the space and the market share will get diffused as new firms enter the industry, decentralizing the market and forcing prices lower. The cycle will continue--vertically and horizontal expansions, start-ups forced to live in the shadow of giants, etc.--until there is a demand for a new platform that decentralizes the unique selling points of the existing industry, yet, provides new opportunities for value to be created, shifting value creation upwards again.

Open Standards and Investment Returns

- Expansion
- Consolidation



History doesn't repeat itself, but it often rhymes

The tech industry trend of expansion, consolidation, and decentralization is nothing new. In the 1970s, the introduction of microprocessors disrupted the tech industry. Microprocessors decreased the production cost of computers and boiled the goliath CPU system down to a small device that could easily be mass produced.

Microprocessors lead to the establishment of industry giants like IBM, who were able to create value out of this platform in the form of computers and laptops, which eventually lead to the creation of things like the cell phone and gave us a portal to the internet.

As the hardware space became decentralized, and other companies began making laptops and computers, prices decreased, and margins declined. However, cheaper computers attracted new consumers to the market, and in turn, there became a new opportunity for value to be created within products that are necessary for hardware to function--operating systems and software.

IBM's expansion of the blue ocean was greatly accentuated in 1964, with the introduction of the System/360, the first large family of computers to use interchangeable software, peripheral equipment, and service packages. It was a bold departure from the monolithic, one-size-fits-all mainframe. Later, in 1969, IBM changed the way computers were sold. Rather than offer hardware, services, and software exclusively in packages, IBM unbundled the components and offered them for sale individually. Unbundling gave birth to the multibillion-dollar software and services industries.

At this point in history (1970s-1980s), Microsoft took advantage of the new platform--software and operating systems-- and created value on that new innovative platform.

Microsoft practically locked in the percentage of the market they owned by contracting with hardware manufacturers to be the default operating system on laptops and computers. Afterward, Microsoft leveraged their scale in the industry to consolidate the software space and began creating and implementing their own brand of applications--that third parties were also offering--directly into the Microsoft operating system. That move allowed Microsoft to consolidate both vertically, and horizontally, and smaller competitors in the software and operating system space could not compete. Microsoft was able to narrow down the amount of computer software and operating systems people used from the hundreds being offered by third-party competitors, to just one--Microsoft.

With Microsoft's stronghold on the computer operating system market, it became very tough for value to be created at the operating system and software layer; there was now a demand for a new open source platform that could be leveraged to create value, it was time for the cycle to begin again.

In the early 90's, Microsoft's consolidation period was disrupted by the introduction of Linux and the web protocol HTTP. At the time, Microsoft's primary products were its proprietary software, and their business model depended on retail distribution for success. When Linux and HTTP entered the playing field, they brought with them an open source operating system, and a free distribution network, respectively. The open source landscape that both Linux and the Web brought to the world acted as a foundation that companies could leverage to find new innovative ways to create value; and the web (HTTP) was the next new, innovative platform that value shifted to.

The era of online networks, sometimes referred to as the dot-com bubble, led to the creation of some of today's tech giants, for instance, Amazon, Facebook, Google, and Paypal, all came out of the dot-com era. In the online network space, value was created when user networks in which companies could extract and monetize data were created.

Amazon, Facebook, and Google dominate this market with the plethora of applications they offer, and the amount of data they can extract from them. Amazon, Facebook, and Google own such a large share of the online network user market, that is it is difficult--and rather expensive--for start-ups to compete and create value for themselves in the online user networks/private data industry.

For example, it took Snapchat seven years to build a 150 million user base-- it took Instagram less than one year to build a user base larger than 150 million by leveraging their owner's (Facebook's) existing scale. As a result, Snapchat was forced to live in the shadow of the disappearing photo and video platform Instagram story--it's not that Snapchat is a bad company, it's just that Snapchat does not have the resources to compete with a giant like Facebook.

Internet User Networks and the Need for Open Source

The business model of internet user networks/private data revolves around gathering valuable information and charging users via advertisements, transaction fees, etc.; however, this model relies on data being private, this model does not work if a company does not own both the database and the user network. However, because internet user networks require systems to be kept private, society is at a loss because we have yet to see the benefits of what an open-source database and user-network could do for the world.

Although private tech has given billions of people access to great technologies, it has made it difficult for start-ups to establish themselves because their potential audiences tend to gravitate toward industry giants. Because Google, Amazon, Facebook, and Apple keep their online user network information private, innovation is thwarted since information is not a shared resource.

And because user network giants like Google, Amazon, Facebook, and Apple have a stronghold on the market, there is once again a demand for an alternative, open-source platform where opportunities exist that allow the platform to be leveraged to create value.

Blockchain technology and crypto networks

Many are hopeful that blockchain technologies and cryptocurrency networks will allow for the creation of web 3.0--an open source, innovative, cryptographically secured, decentralized internet.

Decentralized networks--like those used by most cryptocurrency networks and blockchain infrastructure protocols--can help create a more competitive, innovate, and secure internet; and digital assets--better known as “cryptocurrencies,” “alt coins,” or “tokens”-- play a crucial role in these decentralized networks.

Blockchain technologies are built on top of protocols that use consensus algorithms to maintain and update the network state and use cryptocurrencies to incentivize network participation among network supporters--miners and nodes--and network participants such as consumers.

When the web was coming to fruition, it was created by groups of people with similar interests, and word of the technology spread in a grassroots manner; although this approach worked well at the time, relatively few internet protocols that took this approach gained widespread adoption.

The Crypto community thinks that blockchain technologies and cryptocurrency networks can fix this problem since they provide developers, network participants, and network supporters with economic incentive to participate through tokens, rather than relying on the alignment of interest and expertise for adoption and marketing.

Blockchain technologies and cryptocurrency networks are open source, have consensus mechanisms that encourage community governance, and participants can enter and exit these markets freely by buying or selling the tokens native to these networks or by “forking”--copying the open source code of an existing platform--to create a new platform.

Core developers are the individuals who primarily maintain and contribute to the open source software, and economic incentives built into the networks economy incentivize independent third parties to build and scale the underlying blockchain protocol.

Economic incentives can also attract users and entrepreneurs to the blockchain/crypto network. These individuals may share the network with their personal networks, decide to contribute to the code, or even create their own businesses on top of the underlying protocol; as you can see, the structure of blockchain and cryptocurrency economies leaves the potential for unprecedented levels of scale.

Cryptocurrency networks can also disrupt the way real value created by online networks is accounted for. In the current joint-stock equity industry model, the value of a share of stock is a function of its profits. For example, Instagram’s stock would reflect its ability to generate value (monetize) their data--it does not account for the actual value of the service they are providing. However, cryptocurrencies in the form of coins and tokens can effectively prescribe value from user demand instead of company profits.

Why Decentralization leads to innovation

Similar to how HTTP-- the decentralized layer that was built on top of the software layer--lead to unprecedented innovation, some believe that cryptocurrency networks will be the next decentralized layer/new innovative platform, that catalyzes unprecedented innovations.

Developers create software; and although there are tons of skilled developers in the world, not all of them work for tech giants, and an even smaller amount actually work on new product development.

That is why some are hopeful that blockchain technology and cryptocurrency will catalyze unprecedented innovation--because the open-source nature of these technologies is geared toward developers and entrepreneurs, and open-source tech welcomes new additions and encourages innovation.

For example, in the early 2000s, open-source Wikipedia faced competition from private company Encarta; and although Encarta had the better product, with better data, Wikipedia was able to evolve at a faster pace due to its active community of contributors who were attracted to Wikipedia because it was open-source and community governed. By 2005, Wikipedia had become the most popular online encyclopedia--by 2009, Encarta had gone out of business.

Although private products like Encarta start as more complete systems compared to their open-source alternatives, they can only improve at the rate at which employees work on them, which turns out to be far slower than open-source systems, which start with several loose ends but grow exponentially due to their robust community of contributors.

That is why there is hope that blockchain and cryptocurrency networks will be able to disrupt industries ranging from banking and finance to information security. Imagine if a company like Amazon was open source--any individual would be able to fork the project if they did not like the direction the company was taking the business. And instead of tech giants harvesting user data and monetizing it, imagine if the participants on a platform received financial kickbacks from their contributions to the community and system? Blockchain technologies and cryptocurrencies make both of these ideas a reality.

Most blockchain and cryptocurrency networks are open source and can be found on Github, and most blockchain networks have a token native to their protocol that sometimes offers economic

incentives, and always acts as an internal currency, as well as a legal tender, for other operations within that tokens blockchain network.

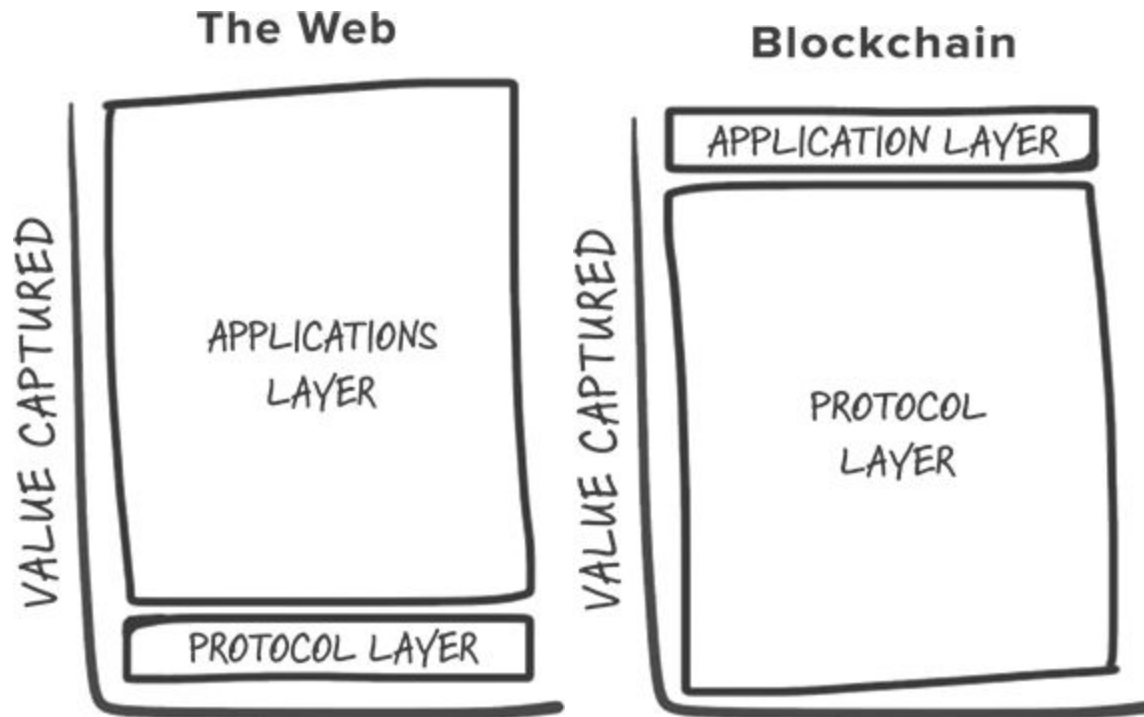
Because blockchain technologies and cryptocurrency networks have decentralized architectures, they both have the ability to resolve issues in banking and finance, information security, market competition, product innovation, equal access to information, and more.

Where is the Value?

Everyone is aware of the internet, but the protocols that acted as the base of the internet--for instance--HTTP, TCP, SMTP are often overlooked. That's because a majority of the value on the internet, and a majority of the time we interact with the internet, we are using applications that were built on top of those original protocols. For instance, Facebook, Google, and Amazon are all applications that are hosted on the web.

The shared protocols like TCP/IP, HTTP and SMTP produced indefinite amounts of value, but most of that value got captured in the application layer--mostly in the form of data.

Hence, when we look at the Internet stack and consider how value is distributed, we like to say protocols are "thin" with value and that applications are "thick" with value.



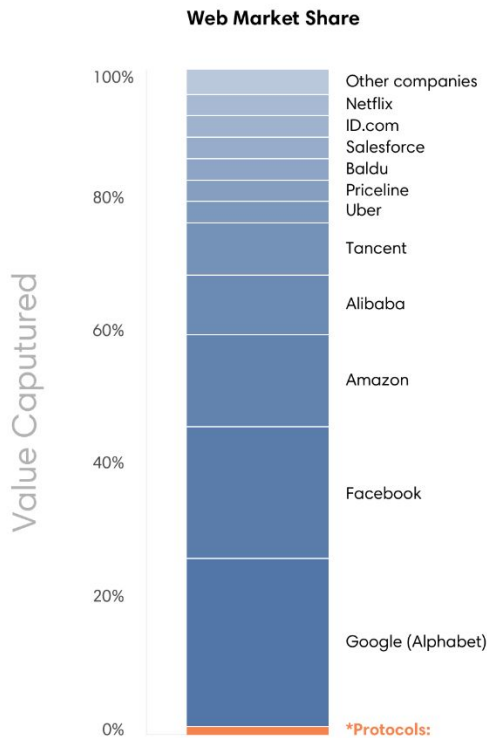
However, the opposite holds for blockchain networks. A majority of the time that people are interacting with blockchain networks, they are using blockchain infrastructure protocols--services geared towards developers that allow them to create blockchain protocols or decentralized applications of their own.

The infrastructure protocol layer is the backbone to the blockchain and cryptocurrency industry and is where a majority of the value in the industry resides.

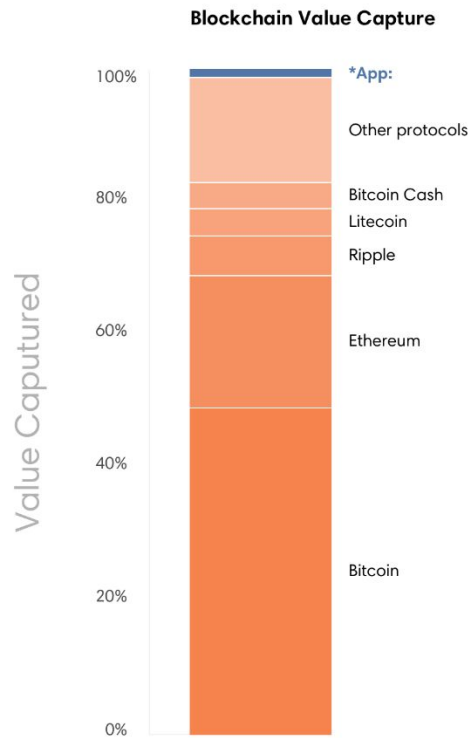
Protocol value 97%



Application value 3%



* Protocols: TCP/IP, HTTP, TLS/SSL, FTP, et al. 0%



* App: Bitstamp, Xapo, Abra, Brave, Veem, Chain et al. 3%

* Other: Ox, Augur, Zcash, Golem, Kyber, OmiseGO

Unless an individual is building a blockchain protocol of their own, they are most likely going to build their network or decentralized application on top of an existing infrastructure protocol; Ethereum saw great success for that reason.

Ethereum has a market cap of 13 billion, however, the largest companies built on top of the Ethereum protocol--also referred to as ERC-20 projects-- are worth a few hundred million at best; this is not unusual, the market cap of blockchain protocols almost always increases faster than the applications built on top of that protocol. However, successful products on the application layer encourage further speculation at the protocol layer since the application is bound to the base protocol. Therefore, the base protocol grows as the applications built on top of it become adopted and increase their user-bases.

For example, consider how interoperable cryptocurrency exchanges are; they all leverage and provide free access to the same underlying resource --transactions that occur over blockchain networks. Because the underlying resource can be accessed for free and is open source, the market is forced to reduce prices, build better products than their competitors, and innovative to excel.

As a result, a robust ecosystem of applications is created--most tied to an underlying infrastructure protocol--and the value on the network is spread over a swath of participants on the network. Because infrastructure protocols are often at the base, as more applications are created, the base protocol becomes more valuable--that is why we like to say infrastructure protocols that use a token are “fat” with value, while the applications built on top of them are relatively “thin” with value.

How we invest.

At WhitePark, we are interested in projects that have non-speculative use cases. Our thesis is that blockchain technologies and cryptocurrency networks are decentralizing the current online user network/private data layer of the internet, collapsing production costs, eliminating data monopolies, and catalyzing the next wave of innovation. Therefore, we are interested in investing in decentralized blockchain protocols with a cryptocurrency native to the protocol.

In addition, we are looking to invest in companies where we can create value within the team through our relationships with industry professionals who can help build and scale the company in areas like governance, cryptoeconomic design, community management, strategy, and organizational development.

Investment Opportunities

There are generally three different types of blockchain related investment opportunities: blockchain infrastructure protocols, Decentralized Applications (DApp), and user interfaces.

Blockchain infrastructure protocols: an infrastructure protocol is a platform geared towards developers that allows them to create blockchain protocols or decentralized applications of their own--for example, Bitcoin and Ethereum are blockchain infrastructure protocols. Infrastructure protocols have two layers. The first layer consists of low-level blockchains like Bitcoin and

Ethereum which are differentiated by scale, security and consensus mechanisms. The second layer consists of protocols like Augur, Maker DAI or 0x, which provide additional services provisioned by their own network of 'miners,' however, use an underlying low-level chain (like Bitcoin or Ethereum) to enforce cryptoeconomic consensus. The tokens within these protocols provide access to important components such as identity, compute, storage, bandwidth, transcoding, etc.

Decentralized Application: a Decentralized Application is an app that is built on blockchain technology. There are a number of Decentralized Applications, ranging from games to office-related services. You can think of a DApp like an app that you might come across in Apple's App Store. Decentralized Applications rely on the infrastructure protocol for functionality but are unique in the sense that they usually have their own token. DApps compete on the basis of community, governance, and cryptoeconomics.

User interfaces: User interfaces can be thought of as portals that give individuals access to blockchain related technologies, goods, or services--for example, Coinbase is a user interface. Most user-interfaces do not have a token of their own.

Considering the current state of the blockchain and cryptocurrency industries, the majority of the value is in the infrastructure protocols, as well as the tools, and services that support the development of applications, infrastructure protocols, and underlying user interfaces.

We believe that blockchain technology and cryptocurrency are entering a new stage within the economic cycle; the period where digital asset prices skyrocketed faster than fundamental utility was provided resulting in a bubble, and eventually, a correction, has already been weathered.

Although nobody is sure whether or not the trough has been reached yet, in time, the next cycle of expansion will begin. For these reasons--among many others--there is little risk involved with entering the blockchain and cryptocurrency industries, and the potential upside of investing in these industries is high--especially when you consider that the best has yet to come (a killer application, and a product in the traditional financial markets). However, it is important to analyze and invest in companies who have sound cryptoeconomic models that support long-term time horizons.

When digital assets--cryptocurrencies--increase in value, they create a bit of buzz that typically attracts developers, entrepreneurs, and speculators; as a result, some will invest and become stakeholders in the project. Some might even decide to build their own company, product, or service on the protocol--if an entity can successfully do this, then the success of the project that they built on the protocol will attract its own set of consumers, developers, entrepreneurs, and

speculators. As a result, the value of the project will increase, which in turn, will increase the value of the underlying protocol, which will again, attract more consumers, developers, entrepreneurs, and speculators, which should lead to more development and innovation over the base protocol--and this cycle will continue as long as there are individuals interested in building.

As you can see, a positive feedback loop is created where a strong infrastructure protocol attracts companies interested in building on that protocol and the goods and services the companies are building attract new users to their platform which often require the use of the companies token.

But since the company's goods and services are tied to the infrastructure protocol, this means that in the grand scheme of things, the value on the protocol layer recurses upon itself to exponentially increase as more companies build on the protocol.

In other words, the more users that join the protocol, the more individuals there will be using the token native to the platform, which is intertwined with the blockchain's infrastructure protocol (because the platform was built on the infrastructure protocol). This causes the infrastructure protocol to become more valuable as transaction volume as well as the market cap and the demand for goods or services tied to that protocol increases.

At first, most of the growth on the network will be due to speculation; most cryptocurrencies have a finite supply, so as more users join the protocol and buy its tokens, the token price and market cap of the network increases, which tends to attract more speculators. Often times, interest in the platform increases faster than the token supply and fundamentals of the platform and result in a bubble.

However, speculation is not an entirely bad thing. Speculation can be a driver of tech adoption. Periods of economic expansion attract institutional and retail investors as well as venture capital, and periods of price and market consolidation can be beneficial to the long-term outlook of projects as network participants find new and innovative ways to create value on the protocol or platform.

It is important to point out what occurs at the end of this positive feedback loop too. When innovations begin to show signs of success, whether that means users have adopted the good or service, or capital has entered the market, new users are attracted to the protocol, and this increases the demand flow on the underlying protocol. As a result, stakeholders in the project are incentivized to hold onto their tokens in anticipation of higher prices in the future, which puts a squeeze on the token supply, and can contribute to even further price increases.

How we invest

At WhitePark Capital, we invest in decentralized blockchain protocols that have a token native to the protocol, that increase in value as demand for the protocol and the applications built on the protocol increases.

We are genuinely interested in building relationships with teams, so we are particularly interested in investing in companies where we can be a partner to the core development team and be assets in their community. Particularly, we are looking to add value in seven key areas,

- 1) Legal & Regulatory
- 2) Smart contract security audits and code reviews
- 3) Community management and PR
- 4) Crypto economic design and token distribution mechanisms
- 5) Recruiting and executive coaching
- 6) Cash management and OTC
- 7) Business development (connecting with other projects and exchanges)

We are committed to supporting our portfolio networks in their early days by providing marketplace liquidity, governance, and other services where a crypto-native investor can add value; this requires the confluence of capital, technical ability, and understanding of how these networks function. We take this approach for three primary reasons;

1. It allows our investment thesis to evolve as we work very closely with, and receive information from, professionals within certain sectors of the market,
2. it will enable us to build our reputation in the blockchain and cryptocurrency industry as value-add investors, and
3. it gives us insight into how we can expand or consolidate individual positions over time.

When considering an investment, we analyze the projects team, economic structure, market, product, technology, and more, and if we do decide to invest, we are constantly re-evaluating these metrics as the company makes progress.

Tech

When we evaluate a project, the first thing we look at is its tech. What we are really looking to see is if the project is sound and makes sense. Although this may sound intuitive, there is more to

this idea than meets the eye. For example, a lot of the projects in the blockchain and cryptocurrency space relate to computer science--if a team is trying to create a project that violates laws of computer science, then that is an immediate red flag.

Team

Consumers are not going to adopt a sub-par platform, and because a majority of blockchain and cryptocurrency projects are open source, developers are incentivized to act on the interests of the community; otherwise, a community member might fork the project! That is why it is crucial to invest in a team that has strong leadership and community management skills.

The ideal team is transparent, open to collaborative management, involves the community in network decisions, and encourages community participation on the network. The community is key to building an atmosphere that will allow the platform or protocol to survive long term.

Industry experience is important, however, finding a founder who is passionate about the possible worlds that decentralization can create is far more valuable than finding a founder who can turn a quick buck. We are more interested in long term value creation than we are a short-term profit.

Economics

In the blockchain and cryptocurrency industry, the economic structure of a protocol, or decentralized application is referred to as the projects “Cryptoeconomics” or “Tokenomics.” A projects cryptoeconomic structure determines how the token is created, distributed, earned, etc. If we consider Bitcoin’s cryptoeconomic structure,

1. The supply is capped at 21 million Bitcoin,
2. New Bitcoins are minted at a defined rate
3. free market competition determines transaction fees, etc.

You can think of a projects cryptoeconomic model as the projects monetary policy. The most successful projects have high-quality cryptoeconomic models that distribute value across every participant in the network, from developers to speculators to consumers.

An equally important part of a cryptoeconomic model is a project’s governance model. In a way, you can think of each project as its own government with its own governance structure.

- 1) The consensus protocol is like the projects constitution,
- 2) the core developers are like the executive branch--they are the individuals who write and execute the network's code,

- 3) the cryptocurrency native to the network is the government's internal currency, and
- 4) investors can be thought of as the underwriters for the project.

In this sense, you may be able to determine what makes a good blockchain/crypto project by equating it to a traditional economy--is the government's monetary policy sound? Are the government's leaders corrupt? Etc.

Market

We try to position ourselves in markets that will undergo mass adoption because they solve a specific technical or consumer-facing problem, or markets that will experience mass adoption because they generate high levels of interest.

Product

A crucial--but often elusive--factor in the blockchain and cryptocurrency industries is the actual product.

Because the industry is relatively young, not every company in the space has a viable product yet. And since we are dealing with unprecedented ideas, it takes an ample amount of time for most products to launch. However, we expect the time it takes a product to go to market will decrease as the industry matures. Nevertheless, if we are investing in later stage rounds or new protocols, we are looking to see what sort of product the company has created and if it has picked up any traction amongst audiences.

Constant Assessment

And of course, even after we invest, the investment process does not end there; we regularly evaluate the status of the project and determine whether we should be holding, buying more, or selling.

Considering whether to invest more is relatively simple, if a project is undervalued, for instance, the project has hit a significant milestone on their roadmap, but the market hasn't reacted, we believe that it might be a good time to buy more.

On the other hand, when it comes to whether to sell or not, we believe the best time to sell is when the project has reached its max value, or when the valuation of the project does not match the fundamentals of the project any longer.

Either of these things--over and undervaluation--can happen in an instant, so it is essential to always stay up to date with the most current information the market has to offer.

Ideal conditions

Ideally, WhitePark Capital would like to invest in a project during their whitepaper and development stages. During the whitepaper stage, companies often raise capital by pre-selling the cryptocurrency native to their platform at a discounted price. The funds the company raises provides them with the capital that they need to fund their project and build their protocol. All in all, we are looking to invest in blockchain protocols whose long-term value is derived from the user demand and transaction volume on the network.

We plan to continue working with the companies we have invested in as partners, being active participants in the community around their project. Working alongside the community gives us a better understanding of the team behind the project and their values, the ratio of users vs. speculators on the protocol, as well as how that ratio changes over time.

Because we plan to enter projects at a relatively early stage, we are interested in becoming one of the first nodes on the project's network so that we can have a first-hand look at the data and metrics flowing through the system.

In addition, we are going to be investing in companies that fit the bill regardless of market conditions. Even if there is another "crypto winter," we'll keep investing in the blockchain and cryptocurrency industry in anticipation of the new economic cycle and the opportunities that it brings with it which are on the horizon.

Although the current state (contraction) of the blockchain and cryptocurrency industries may look grim, it is the perfect time to invest. It's just like Warren Buffett said,

"Four or five times during their lifetimes, investors will see incredible opportunities, probably in equity markets, [but] they have to have the mental fortitude to jump in when most are jumping out."

Now is the time that people are jumping out of the blockchain and cryptocurrency markets, which makes it the perfect time for **us** to jump in.